

8.5 GB
Dual Layer DVD
Free

Cloud Telephony: Extending Telecom
Networks at Lower Costs

How Transport Apps Have Impacted
Travel for Indian Commuters

Managing Business Risks Through
Asset Security Management

₹150

PCQUEST

UNDERSTAND • CHOOSE • IMPLEMENT IT

DECEMBER 2015

Subscriber copy. Not for sale

Dealing with Security
Threats in the Digital Age

Wireless Technology-
The New Fad in Audio
Entertainment

 CyberMedia

TECH PREDICTIONS 2016

Key insights and expert advice on how key technologies
are going to shape up, cometh the new year



SMB Corner:

- Report: Snapdeal/KPMG SME Study on using Internet for Business
- Bipin Shah, President-TBIA, on Why Traditional Mfg Hubs are Fading Away
- Dr. Ananat Sardeshmukh, DG-MCCIA Opines Why SMEs in Pune are Keen to Use IT
- Shivaji R. Daund (IAS), MD, MSSIDC on the Hurdles to Deliver a Quality Product in the Competitive Market

Developer Corner:

- Decoding Pig: The Data Toolkit of Hadoop

Hot trends:

- 4 Key Trends That'll Impact Automobiles in Future
- Wi-Fi: The Glue that Binds IoT
- Cyber Attacks in Smart Cities

Canvas LAPTOPS

micromax
nothing like anything



THE SMARTEST RANGE FOR THE SMARTEST PEOPLE.



Pre-loaded with Windows 10

Canvas
LAPBOOK
L1161

The perfect device for beginners

BEST BUY: Rs. 13,999/-

GREAT PERFORMANCE Intel® Atom™ Processor Quad Core, up to 1.83 GHz	INCREDIBLE BATTERY 11 Hour Battery Backup* 5000mAh Marathon battery
INCREDIBLE DISPLAY 29.46cms (11.6) WXGA IPS Display Immersive high resolution display	GREAT CONNECTIVITY 2 USB Ports & HDMI Added WiFi and Bluetooth 4.0
A TRULY MOBILE LAPTOP Light-weight, weighs only 1.1kg	INCREDIBLE SOUND Dual Speakers Controlled with Intel® AC9545 Audio Codec for clarity

GREAT PERFORMANCE Intel® Atom™ Processor Quad Core, up to 1.83 GHz	INCREDIBLE BATTERY 8-10 Hour Battery Backup* 9000mAh Marathon battery
INCREDIBLE TOUCH DISPLAY High Definition Touchscreen Display 29.46cms (11.6) HD IPS touch display	GREAT CONNECTIVITY 1 USB Port & 1 Micro USB Added micro USB port along with 1 USB port
UNIQUE DETACHABLE DESIGN Easy Detachable Screen	ON-THE-GO CONNECTIVITY Inbuilt SIM slot for 3G data access, WiFi and Bluetooth 4.0

Canvas
LAPTAB II
LT777

The smartest 2 in 1 for those on the move

BEST BUY: Rs. 17,999/-



Pre-loaded with Windows 10

Comes together with the latest



Intel Inside®. Amazing Experiences Outside.



To know more log on to www.micromaxinfo.com/laptop

Intel, the Intel logo, Intel Inside, and Intel Atom are trademarks of Intel Corporation in the U.S. and/or other countries.

*Conditions apply.

DEEWAAR TOD ROUTER

i
ba11

Your eyeball view.
Our technology new.



iB-WRR300N

200mW High Power

Powerful even
through partitions!

iB-WAC800P

300M Extreme High Power Wireless-N Router | iB-WRX300NP

Broadband
Internet
(Cable/ DSL)

5dBi x 2
Omni-Directional
Antenna

Universal
Repeater

WISP
Internet

ALSO AVAILABLE
AC1200
High Power
Dual Band Router
iB-WRD12EP

iBaton®
ba11 Networking...Not Just Working!

www.iBall.co.in | Over 50 million iBall products sold | follow us on: facebook.com/iBall.co.in | twitter.com/iBallIndia | instagram.com/iBallIndia

Best IT World (India) Pvt. Ltd.: Email: sales@iball.co.in Mumbai - 022 6774 5100 / 3081 5100 / 98900 52890, Ahmedabad - 9909012276, Bangalore - 9611194666, Bhubaneswar - 9861033284, Cochin - 0484 - 2207141 / 42/43 / 44, Chennai - 044-42168560, Dehradun - 9639004150, Guwahati - 9435731459, Goa - 080070 35766, Hubli - 9611194669, Haryana / Himachal - 8750076813, Indore - 98270 89906 / 73899 09965, Jaipur - 9351782703, Jammu - 9419293112, Kolkata - 8017518545, Ludhiana - 95011 04921 / 22, Lucknow - 8400272727, New Delhi - 8860080588, Nagpur - 9371403907, Nashik - 9371469439, Pune - 9970198418, Patna - 0612-2200664, Raipur - 7879783948, Ranchi - 065-12341022, Secunderabad - 9246802281

Contents

20 COVER STORY

TECH PREDICTIONS 2016

The key buzzwords in technology have moved beyond the hoopla and entered the more serious phase where real action is taking place amongst organizations to implement them. We take a detailed look on the key technologies that we love to follow, how they've shaped up thus far and where they're headed for in the near future.

- 22 Wi-Fi: The Glue that Binds IoT
- 24 IoT Shall be the Next Big Force to Drive Mobility
- 26 Internet of Things: The Road Ahead
- 30 What's Coming Up in Smartphones in 2016s
- 35 7 Key Trends That'll Impact eCommerce in 2016
- 36 Cyber Attacks in Smart Cities
- 38 Wireless Technology- The New Fad in Audio Entertainmento
- 40 36 4 Key Trends That'll Impact Automobiles in Future
- 42 Cloud Technologies – Transforming e Learning Landscape
- 44 5 Cloud Trends That'll Impact SMEs
- 46 Improve Internet Performance by Diversifying Your Cloud Portfolio
- 48 The Real Potential of Printing Beckons Us
- 50 Upcoming Trends in Printing Technology
- 52 Cyber Security: Predictions 2016
- 55 Key Trends that'll Impact Online Security in 2016
- 56 11 Key Trends to Impact Storage in the Near Future

TECH AND TRENDS

- 10 Cloud Telephony: Extending Telecom Networks at Lesser Costs
- 12 Cloud Computing – The Silver Lining for SMEs & Start-Ups
- 14 With the Increased Focus on Digitisation there is Enormous Potential for DCIM in India'
- 16 "How Transport Apps Have Impacted Travel for Indian Commuters"
- 18 "Managing Business Risks Through Asset Security Management"

SPECIAL FEATURE

- 60 SMEs Using Internet for Business Have 51% Higher Revenues: Snapdeal/KPMG Study
- 62 Decoding Pig: The Data Toolkit of Hadoop



SMB CORNER

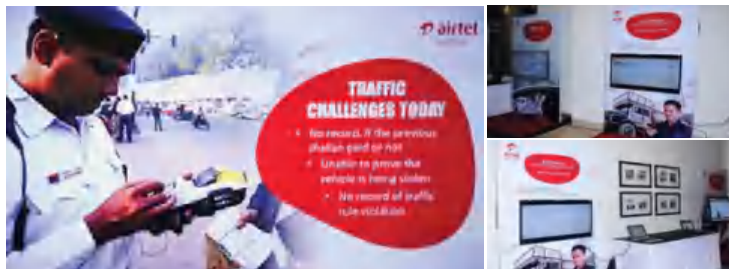
- 67 Setback for Maharashtra SMEs as Traditional Manufacturing Hubs Fade Away
- 68 'We're launching an e-Shop to help Artisans sell their products online'
- 69 'Pune SMEs are Inclined to Utilize Technology But Lack the Know-How'





EXTRAEDGE

77 Government 3.0



78 Digital Leaders' Forum 2015



DVD HIGHLIGHTS

17 free storage and cloud tools for backup and synchronization

Set up your own storage software appliance, create a NAS and SAN setup in a few simple steps, set up cloud-based storage services on your server, create an enterprise-grade open source backup solution, and lots more...

7 Free Developer Tools For IoT

1. Arduino, 2. RIOT, 3. Contiki, 4. Spark, 5. Nimbits, 6. OpenRemote, 7. SiteWhere

8 free bug tracking software

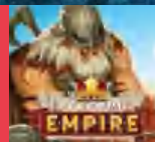
1. Bugzilla, 2. Mantis, 3. JTrac, 4. Redmine, 5. Request Tracker, 6. The Bug Genie, 7. Weblissues, 8. Fossil

5 FULL AND FREE GAMES

• THE PATH OF HERCULES
• MAGNETIC ADVENTURE, • AQUASCAPES
• GOODGAME EMPIRE, • MYSTERYVILLE 2

LINUX DISTROS

• ClearOS Community, • Univention



REVIEWS

70 Cyberoam CR10iNG



71 HP Laptop, CATZ 13000 mAh Power Bank and Digisol DG-WM2003SI

GADGETS CORNER

72 LG G4



73 Apple Car Play



74 3 NVIDIA GPUs

75 Bang & Olufsen Beolit 15 Bluetooth Speaker

76 PhotoFast MemoriesCable 32 GB, Zagg Pocket Bluetooth Keyboard and Vivo Y27L (3-in-1)

SUBSCRIBE NOW!



Turn to page 64

MESSAGE BOARD >>>

READER MAIL & TROUBLESHOOTING ADVICE



NOVEMBER 2015



GETTING WIRELESS CONNECTIVITY

How can I connect wireless internet on my PC? The PC doesn't have wireless internet connection preinstalled. Is there any way to get wireless internet without changing PC parts?

- Rijul M

If you have a router and modem, or a device that combines them both, then you require either a PCI or USB internet adapter (USB is much easier). USB can be connected using any USB port of your PC while you have to install PCI inside the computer and then install a disk.

- Ashok Pandey, PCQuest Labs

THE SENSITIVITY OF PORTABLE SPEAKERS

What effect does sensitivity play when buying a portable speaker?

It is used to determine the amount of power required to drive a speaker. Quite simply, more the sensitivity the better the output. However, nearly all budget portable speakers are centered around 80dB and produced good sound signature.

- Ashok Pandey, PCQuest Labs

BUDGET NOTEBOOKS

Please suggest some budget notebooks or convertible laptops around Rs 15,000?

- Jolly V

We have tested three 2-in-1s in our labs recently: NotionInk Cain, Swipe Ultimate Tab, and iBall Slide WQ

149. All three are priced under 20K and offer somewhat similar performance. However, with extra features such as bigger battery, voice calling and good overall construction, iBall Slide WQ 149 is a better option.

- Anuj Sharma, PCQuest Labs

CAMERA TROUBLES

My Nikon D80's autofocus is not working as the pictures taken through it are extremely faded in color.

- Ramesh S

You might have accidentally turned autofocus off. Also, a whitish tinge means overexposure, so reduce your exposure settings.

- Ashok Pandey, PCQuest Labs

SMALL MFP NEEDED

I am running an office and have a medium print requirement? Please suggest me some MFP options?

- Vijay K.

HP LaserJet M1005 Monochrome Multifunction Laser Printer and HP LaserJet Pro MFP M128fw Printer are a good choice for bulk printing. Canon has also launched its range of Laser MFDs- the MF200 series earlier this year for the SOHOs and SME segment. The series includes MF 221D, MF 217W, MF 226dn and MF 229dw that are loaded with a host of productivity and convenience features.

-Anuj Sharma, PCQuest Labs

LAPTOP FOR EDITING VIDEOS

I spend a lot of time editing videos and photographs and I want to buy a new laptop for this. Can you tell me what specs to look for?

- R. Jagtiani

If you want to edit videos and pictures then you need a top of the line CPU – Intel Core i7 or at least 3rd generation Intel i5, a high end graphics card like Nvidia GeForce GTX 780M SL or AMD Radeon HD 7970 to handle intense graphics, and definitely a higher resolution screen (Full HD). You can get such specs from almost all major brands like HP, Samsung, Lenovo. You can also enjoy gaming on these power machines at times.

- Anuj Sharma, PCQuest Labs

MINIATURE PCS

What is PC on a stick? What can it do for me?

- Jaishree M

PC-on-a-stick is characterized by a tiny form factor device that resembles a dongle, generally using an ARM or Intel Atom system on a chip, has low energy usage and fosters portability at low prices. An example of this

Write to the Editor

Print: Editor PCQuest
B-35, Sector 32, Gurgaon
Haryana-122001

Email: pcquest@cybermedia.co.in

Letters may be edited for brevity and clarity.

DVD Queries:

pcq-dvd@cybermedia.co.in

PCQuest Forums:

forums.pcquest.com

Website:

www.pcquest.com



Follow Us on Twitter
www.twitter.com/pcquest



Like us on Facebook
<http://facebook.com/pcquest>

is the Intel Compute Stick, which fits in the palm of your hand and can easily transform your TV or any other HDMI compatible device into a fully functional computer offering full Windows 8 experience. You can search the web, share your photos, keep an eye on your email or do any of the basic routine tasks that you do on your computer today. All you need is a wireless keyboard and mouse and you're good to go.

- Anuj Sharma, PCQuest Labs

COMPACT BLUETOOTH SPEAKER

I want to buy a compact and stylish Bluetooth speaker to listen to music on the go. Please suggest me one.

- Dilpreet S.

The possible option can be an Altec Lansing Life Jacket speaker. It is compatible with all devices that are Bluetooth enabled like tablets, laptops and also on the platforms like Apple, Android, and BlackBerry. Other options can be Jabra Solemate Mini, JBL Flip 2, JBL Charge etc. The Jabra Solemate Mini has good bass for such a small speaker. If your audio file is of good quality, then you're guaranteed a great mesmerizing sound. Even at full volume, the sound is not distorted.

- Anuj Sharma, PCQuest Labs

STORAGE CARD ISSUES

I have a Vivitar DVR 925HD camcorder and a Verbatim Premium 8 GB SDHC class 10 card. Whenever I go to record a screen pops up that says "Storage Media". When I try to take a picture the screen says "Card Protected". My SD card isn't locked and I'm very confused.

- Vijay M

First you need to check whether your camera supports the SDHC card of 8 GB or not, because its an old camera and it may not be compatible with newer SD cards.

- Ashok Pandey, PCQuest Labs

CHOOSING THE BEST CAMCORDER

Should I go with a Canon or a Sony camcorder?

- Rakesh S

Both brands are approximately the same, it depends on your requirements to choose the best one for you. The higher priced Sony camcorders have a built-in infrared emitter, but none of the Canon camcorders do - so if your definition of "better" includes having the ability to shoot monochrome video under zero visible light conditions, then Sony is "better". As for build quality, both are great, lenses are fine, imaging chips are similar... assuming of course, the camcorders are in the same price range.

- Ashok Pandey, PCQuest Labs

HEADPHONES WITH GOOD BASS

Please advise me on a headphone which has an amazing sound quality with good bass. The price range is between 10-15k.

- Narsimhulu K

At this price range you can get a variety of headphones that offer superior sound quality. The Bose SoundLink Bluetooth On-Ear is compact, comfortable and delivers excellent sound signature for a Bluetooth headphone. It

also works well as a headset for phone calls, its buttons are easy to operate by feel, and battery life is good at 15 hours. Bowers & Wilkins C5 Series 2 sounds rich with improved clarity, more openness and tighter bass. You can also go for Sennheiser Urbanite XL offering great dynamic sound with good bass response. The headphones fold up into a compact form factor making it portable for carrying around and while travelling.

- Anuj Sharma, PCQuest Labs

TWEAKING UBUNTU 14.04

I use Ubuntu and want to know how do we install Cairo dock on Ubuntu 14.04 and remove the original task bar. Please advise.

- Dhanush Kumar

I have done an article related to this, "Get a Mac OS-X Style Desktop Dock on Ubuntu" (<http://bit.ly/1FMwBMK>), where I have explained everything about changing the taskbar and using Cairo dock instead using its default Unity launcher (taskbar).

- Raj Kumar, PCQuest Labs

ARE BIG SCREEN TVS WORTH THE MONEY?

We hear a lot about big screen TVs with very high resolutions. But are they worth spending your money on?

- Rajvir Singh

If you are buying a new TV or exchanging your old TV for a newer one, I would recommend a 32 inch for bedroom and 50-55 inches for the living room. And if price is not a constraint then anything larger than that would be best as watching something over a bigger screen is always fantastic. In addition to this, rather than going for any other feature like 4K resolution, Smart TV, 3D, or higher refresh rates, stepping up the TV screen size is the best use of your money.

- Anuj Sharma, PCQuest Labs

THE BEST UHD TV

I want to purchase a top-notch TV that should provide a completely immersive experience. I've heard a lot about UHD 4K TVs but are they worth spending money on?

- Rishabh

UHD TVs still have a long way to go before gaining customer confidence as little UHD content is available today. Yet most manufacturers are not sitting behind and are pushing 4K screens in the market. The UHD TVs definitely produce much sharper and detailed images and will surely enhance your viewing experience. Technology is likely to go mainstream, so it would be good to buy one now to future-proof your investment. However, we wouldn't suggest that you swap your current high-definition set for a 4K one. Best would be to wait a little until 4K TV prices drop to reasonable levels and more content is available for them. But still if you want to go for a 4K TV, some preferable TV models are: Samsung Curved UHD TV, Sony Bravia 4K and LG UHD LED TV. But if you want an affordable 4K TV, try having a look at Micromax 4K TV launched recently that also delivers appreciable picture quality at such a competitive price.

- Anuj Sharma, PCQuest Labs



Anil Chopra, Editor
anilc@cybermedia.co.in,
@anilchop on twitter

5 key points to keep in mind before undertaking your information digitization journey

It's Digitize India Before Digital India!

The full potential of a Digital India can only be realized when all information is made available anytime, anywhere, to anyone, and on any device. Sadly, this is still a distant reality as a lot of information in most organizations continues to lie in silos, and a major chunk of it is still on paper.

Information digitization should therefore be one of the pre-requisites to digital transformation for most organizations, including (and especially) the Govt. It's an area that doesn't usually get much visibility in media, but that doesn't undermine its importance.

Organizations must digitize their records, not only to reduce paper, but to ensure smooth flow of information. This is easier said than done, since you're dealing with huge volumes of information. It requires careful planning, a robust process right from scanning a document to processing it and making it available where required. Here are 5 key things to do to lead a successful digitization journey:

1. Understand your Key Motivators

In order to frame a digitization strategy, it's critical to first assess and identify your key motivators. Is it to provide easy access to data and information? Or do you need to simply lower your process costs, like manpower resources that manage your paper based processes, cost of paper itself, etc.? Another motivation could be to empower your customers with access to documents on their own, like an insurance company providing customer policy documents online or a govt. department providing citizen information like ITRs, land records, etc. online.

2. Define Your Digitization Priorities

Next step is to define the digitization priorities for your organization. Do you need a document management system to handle the deluge of documents? Or do you need a workflow automation system for a particular business process? You could also look at digitization to improve customer communication and quality of customer service.

3. Understand What to Digitize

What to digitize comes next, and determines the entire digitization process. An IT/ITeS company for instance, would need to digitize service records, purchase orders and contracts. A retail organization on the other hand might have huge inventory records, vendor payables, and customer service records. The BFSI segment on the other hand needs to digitize new customer acquisition forms, claims processing, and customer service records to name a few. Education institutes would have answer sheets from test papers, student and staff records, or academia transcripts; while manufacturing companies would have accounts payable, engineering change notices, manufacturing records, or ordering and fulfillment records. The Indian govt. has a whole deluge of paper based documents to digitize, be it citizen records, land records, administrative records, Legal and court records, etc.

4. Select your Hardware

It's after all this that selection of hardware and software kicks in. In hardware, the most critical component is a document scanner (which is different from a routine flatbed scanner). Here, you could opt for

a large, centrally-placed scanner and send all documents to it for digitization, like in an insurance company. Or, you could look at separate scanners for each department or a dealer/distributor network. A large automotive organization for instance, could issue document scanners to its dealers to digitize all their paper based documents from sale, service, inventory, etc.

Besides scanners, you also the right amount of storage, since you'll be dealing with large volumes of digitized data. Security is also critical here to ensure that the digitized information does not fall into the wrong hands.

5. Choose your Software

Choice of software depends upon the process you're automating and how you want the information to flow, the level of tagging to be done for each document, whether OCR is required or not, and which of your enterprise applications need to be integrated to it. Accuracy of digitized data is another area of concern and should be looked at carefully.

There are enough digitization successful cases out there whose RoI speaks for itself, and since everything is going digital, why should documents remain on paper? It's time to transform.

Wish you a great new year ahead!



Scan this to write to the Editor

To download a barcode app, SMS <f2k> to 56677 from a mobile phone with Internet access and camera.

EDITORIAL

EDITOR: Anil Chopra
EXECUTIVE EDITOR: Adeesh Sharma
SR. COPY EDITOR: Sidharth Shekhar
CORRESPONDENT: Nijhum Rudra
CONSULTING EDITORS: Vinod Unny, Shekhar Govindarajan, Sameer Mathur, Amaresh Patnaik
DESIGN MANAGER: Vijay Chand & Amit Sethia

CYBERMEDIA LABS

SR. TECH ANALYST: Ashok Pandey
TECH ANALYSTS: Anuj Sharma, Raj Kumar Maurya
EXECUTIVE (CONTENT): Sonam Yadav

SALES

Sr. Vice President - Sales: Rachna Garga

NCR:

GM - Sales : Harminder Singh, Vandana Chauhan
Manager - Sales: Ajay Dhoundiyal, Sudhir Kumar Arora
Asst. Manager - Sales: Mohammad Shoeb Khan

MUMBAI:

Asst. Vice President - Sales: Ravindranath G. Nair
Asst. Manager - Sales: Aparna Tawade
Executive - Sales: Kanchan Vipul Sonawala

BENGALURU:

Asst. Manager - Sales: Pradeep Kumar

CHENNAI:

Asst. Manager - Sales: Arun D.

KOLKATA:

Sr. Manager - Sales: Sandeep Roy Chowdhury

MARKETING

Asst. Vice President: Satish Gupta
Executive SEO: Navneet Kumar Srivastava
Asst. Manager Admin: Shiv Kumar

INTERNATIONAL SALES, ALLIANCES & EVENT OPS

Asst. Manager: Mihir Pandya

SHARED SERVICES

GM, PRINT SERVICES: T Sriengan
SR. MANAGER, AUDIENCE SERVICE: Sarita Shridhar
MANAGER, MIS & DATABASE: Ravikant Kumar
SR. PRESS CO-ORDINATOR: Harak Singh Ramola

CIRCULATION & SUBSCRIPTION

CHENNAI: C Ramachandran, **BENGALURU:** Raghvendra S.
MUMBAI: Raju Salve, **DELHI:** Jagdeep Khanna

For subscription queries contact: rsepcq@cybermedia.co.in
For general queries contact: pcquest@cybermedia.co.in

CORPORATE OFFICE

Cyber House, B-35, Sec-32, Gurgaon (NCR Delhi) 122001. India
email us pcquest@cybermedia.co.in
call us +91-124-482-2222, **fax us** +91-124-238-0694

OUR OFFICES

BENGALURU

Address: 205-207, Sree Complex (Opp. RBANMS Ground)
73, St John's Road, Bengaluru - 560 042
Tel: +91 (80) 4341 2000, Fax: +91 (80) 2350 7971

CHENNAI

Address: 5B, 6th Floor, Gemini Parsn Apts,
599 Mount Road. Tel: 044-28221712

KOLKATA

Address: 307, 3rd Floor, Ballygunj A.C. Market,
46/31/1 Gariahat Road. Tel: 033-65250117

MUMBAI

Address: 103, Andheri Saurabh CHS, Above Andhra Bank,
Andheri Kurla Road, Andheri (East) Mumbai 400093
Tel: 022-28243964, 42085100

DELHI

Address: Cyber House, B-35, Sec 32, Gurgaon,
NCR Delhi-122001. Tel: 0124-4822222, Fax: 2380694

SINGAPORE

Address: 1, North Bridge Road, # 24-09 High Street Center
Tel: +65-63369142

USA

Media Representative: Ms. Leslie Hallanan, Avani Media Inc.,
80 Liberty Ship Way, Suite 25, Sausalito, CA 94965, USA
Tel: +1-415-3312150, Fax: +1-415-3312151
Email: info@avanimedia.com, Website: www.avanimedia.com

Printed and published by Pradeep Gupta on behalf of CyberMedia (India) Ltd,
printed at printed at International Print-O-Pac Limited, C/4-II, Phase II, Hosiery Complex,
Noida-201301, Distt. G.B. Nagar, published from D-74, Panchsheel Enclave,
New Delhi-110017. Editor: Anil Chopra. Distributed in India by IBH Books & Magazines
Dist. Pvt. Ltd, Mumbai. All rights reserved. No part of this publication may be
reproduced by any means without prior permission.



www.pcquest.com



<http://twitter.com/pcquest>



<http://facebook.com/pcquest>



<http://linkd.in/pcquest>



<http://gplus.to/pcquest>



pcquest@cybermedia.co.in

Cloud Telephony: Extending Telecom Networks at Reduced Costs

Cloud telephony is built on a hosted platform and so enables SMEs to build new branch communications capabilities from scratch and can be plugged into existing telephony networks, providing a uniform customer experience



– Ambarish Gupta, CEO and Founder, Knowlarity Communications

With the smartphone market growing at a phenomenal rate and with the rise of the BYOD trend, where more employees are bringing their personal devices and apps to work, more businesses will start looking at cloud telephony not only as a mere cost saving option but as a business productivity tool going forward.

To cater to SMBs' online communication needs, cloud telephony service providers are helping businesses study call patterns and improve services accordingly. The modern communication services manage all types of business communication activities: telephony, IVR, fax, call conferencing.

Since Cloud telephony is built on a hosted platform, businesses can build new branch communications capabilities from scratch in less than a day's time. This can be plugged into existing telephony networks through extensions providing uniform customer experience.

Unlike conventional telephony systems there is no need to build telephony capacity in anticipation of demand; cloud telephony resources can be scaled up automatically with the rise in demand and released when demand recedes. Besides building up communications capability

cloud and business telephony helps in capturing leads, ensuring no leads are lost in the process, and nurturing leads for business development. It improves marketing ROI by targeting channels that are more productive for the business and also improves customer services.

At present companies from industry verticals like e-commerce, real estate, healthcare, education, and media are the primary users of cloud telephony, but it seems more addition to this list will happen in the coming years.

Cloud telephony as a facilitator for digital transformation

SMBs and startups are using cloud telephony services and BYOD is facilitating digital transformation. These services are helping business to never miss a single order from any customer while all orders placed via website and Twitter can be tracked and fulfilled, entertaining every customer.

If all the agents are busy when a customer tries to call and calls are missed, then also a simple, yet ingenious solution, instead of getting a busy tone, redirects to a centralized call center. The call center agent takes down his the order along with other required details and passes the information. This way the customer has the great experience and business never misses a customer.

In a rare scenario, when all agents in the outlet as well as the centralized call center are busy, there are chances of a few missed calls. In such cases, all missed calls can be tracked easily and call backs arranged in a matter of seconds.

Depending on the business requirement, customers could instantly connect with the agent for order/booking purposes via Click-to-Call. Customers had to click on the 'Call' button and enter their phone number to receive a quick call from the agent. Once the call ends, the business will receive complete CDR (Call Data Record) data through its API. □



Ambarish Gupta
CEO and Founder,
Knowlarity Communications

"Cloud telephony resources can be scaled up automatically with rise in demand and released when demand recedes."



Not Just an Antivirus

TOTAL PC PROTECTION

- Real time protection
- Vast virus registry
- Instant USB virus alert
- Heuristic analysis
- Multilingual



Beyond Protection...

We Manage Your Online World Too



Amazing Technical Support



TOLL FREE NO.: 1800-300-24200

Cloud Computing – The Silver Lining for SMEs & Start-Ups

Many small businesses are saving through Cloud-based data storage and backup. The Cloud enables retrieval of the latest versions of data in case of an on-site system failure or a disaster



– Biswanath Bhattacharya, Chief Executive, HCL Services

Cloud Computing is proving to be a breakthrough innovation that is redefining the way IT solutions are delivered globally. CIOs are investing or planning to invest a sizeable chunk of their IT spending on Cloud Computing. In India, 65% of large enterprises are making use of Cloud technology, services and solutions as part of their IT infrastructure. As per a recent Gartner report, the Indian public Cloud market is poised to touch \$1.9 billion (about Rs 12,000 crore) by 2018. In India, the five year CAGR from 2012 to 2017 is projected at 33.2% for Cloud services' revenue across all segments of the Cloud computing market. Segments such as Software as a Service (SaaS) and Infrastructure as a Service (IaaS) have higher projected CAGRs of 34.4% and 39.8% respectively.

The theory of Cloud computing has evolved through a number of phases which include grid and utility computing and SaaS. It enables users to access information from anywhere, at any time, through various connected devices. Even though Cloud Computing has been touted as an IT game-changer for over 10 years, it is only now that we are seeing real traction in the market



Biswanath Bhattacharya
Chief Executive, HCL Services

“Cloud computing has opened up a whole world of possible industry disruptions –allowing start-ups and SMEs to compete successfully with long-established enterprises.”

with businesses reaping benefits from the twin value drivers of Cloud Computing - improved productivity and cost savings.

Most small businesses that have migrated to the Cloud have successfully reduced the cost of running applications. This is because the initial capital investment and the ongoing supporting headcount required to install and run hardware and software is provided by the Cloud service provider.

The challenges in migrating to Cloud

While Cloud offers significant benefits the process of migration is not without its challenges. Establishing the ROI involves a cost-benefit analysis of the transition and how technology may change after some time for other upcoming solutions. Cloud ROI computation is complex because it involves measuring the business impacting value of IT.

Many small businesses are saving through Cloud-based data storage and backup. The Cloud enables retrieval of the latest versions of data in case of an on-site system failure or a disaster. A Cloud-based service backs up data frequently and automatically to a safe online location, so that in case of a calamity, the business can be up and running within minutes. Many providers offer geo-redundant backup, so that data is saved in multiple centers across multiple locations, ensuring better security. Cloud email is another advantage through which small businesses can realize efficiencies and enhanced features. Tools such as Office 365 and Gmail for Business are not only hassle-free and inexpensive to maintain your own email server or disparate systems; they also include many add-on features that lets you access mail from any device, synchronize calendars, and avail email backup, security and availability.

New business processes that have been propped up by Cloud

Another process that Cloud Computing has enabled is invoicing (integrated time sheets, sales data, and automatic billing). Marketing also is enabled due to Cloud-based platforms that have transformed small businesses handle email broadcasts, social media, virtual events and more. Cloud computing has opened up a whole world of possible industry disruptions –allowing start-ups and SMEs to compete successfully with long-established enterprises. It is also paving the way for greater differentiation in the marketplace, allowing businesses the freedom to concentrate on their own product and outsource anything which does not distinguish them from competitors.

Cloud computing also plays an integral role in the organisation's business model; allowing it to offer a reliable and, most importantly, real-time overview that would be impossible on a typical physical on-site infrastructure. Start-ups can now potentially access the same level of IT sophistication as any enterprise – and with the ease of outsourcing, can ignore most of the operational issues and focus on improving the core product or using IT to open up new revenue opportunities. Meanwhile, the enterprises which invest in a Cloud platform are also able to re-discover the level of flexibility they enjoyed back in their day as a

small business. In both instances, obstacles to growth have been removed. And if we have to calculate the Clouds's ROI, we can look at swift deployment of workloads, business agility and how quickly the business has reached out to the market with its products and services.

In the last few years most of the major trends, be it BYOD, mobile working and big data to business intelligence and analytics, have all been made possible thanks to the flexible and reliable environment offered by the resilient Cloud platform. The Cloud represents a fundamental shift in the way businesses can operate. It is therefore an advancement that organisations must embrace in order to stay in tune with recent developments, since a widespread adoption of this technology is projected to have a transformative effect not only on small businesses, but also on large companies and government organizations. Though the future of Cloud Computing in India seems encouraging, immediate adoption of Cloud is slow. Unless start-ups that are into developing Cloud solutions attain global focus for their products, it will be hard for them to scale and grow to sustain investment costs. Cloud Computing is not a silver bullet, but it does eliminate or reduces the cost of failure and offers a way of future-proofing businesses. And as long as entrepreneurs can invent new business models the capabilities of the Cloud will continue to surprise us. □

**Before Investing Crores
on IT Purchase,
CIOs Spend ₹150 on PCQuest
and Visit pcquest.com
....Wise Decision**



For ad sales queries, contact:
Harinder Singh

Email: harinders@cybermedia.co.in

WE'RE SOCIAL AS WELL:



www.pcquest.com



<http://twitter.com/pcquest>



<http://facebook.com/pcquest>



<http://linkedin.com/pcquest>



<http://google.com/pcquest>



pcquest@cybermedia.co.in

'With the Increased Focus on Digitisation there is Enormous Potential for DCIM in India'

We spoke to Cassio Vaquero, Regional Director - Information Management, Kodak Alaris-APAC, to understand the DCIM technology and how it's different from traditional methods of document capture, the opportunities in India, and his predictions for the future

– Adeesh Sharma

1 Tell us about the challenges faced by enterprises of all sizes in managing the 'data deluge'?

Organisations are flooded with information coming in from different sources. Paper-based forms still form the bulk of information input but they have been topped up information coming in from digital sources, such as popular social media channels, smartphones, etc. Dealing with large volumes of unstructured data that is received from new digital devices and channels is a logistical nightmare. So, it is important that there is real time access available to process this data to gain both agility and speed to remain competitive. For instance, look at the insurance industry. They need to disburse numerous claims on a daily basis. And all of them require processing of phenomenal information saved across different forms. If files and documents are not managed in an organised manner, it could result in data being lost and therefore an unhappy customer. Hence, the need for information management solutions that can help streamline critical processes and assist in ensuring compliance.

2. What kind of solutions do you offer to address these challenges?

To address these challenges you need to practise Document Capture and Information Management



Cassio Vaquero
Regional Director - Information Management, Kodak Alaris-APAC

"This industry is witnessing 10% growth globally but in India we've witnessed 20% annual growth since the last three years. Increased growth shall push more innovation and we're already seeing scanners that can share multiple PCs. Apart from this, network scanners are coming in early 2016."

rigorously within your organisation. The basic step to implement this system is to have a device to digitise information coming from hard copies. We have solutions that start as low as Rs 20k that digitise information from paper forms. The bigger variants also combine business analytics capabilities along with basic digitisation of information. These provide document scanning speeds as high as 210 ppm. The solutions are OS agnostic and let you capture information from multiple sources: paper, social media channels, etc, and feed them into the right process as part of the document management system within an organisation. The beauty of these products is that they work as well with old IT infrastructure as they do with new IT infrastructure as bulk of the processing is done by the CPU and image processor inside the scanner box. Information can be ingested from different types and sizes of paper and the digitised data fed into the DMS or ERP system deployed within the organisation. The software tools that form part of the combo solution have the intelligence to differentiate the non-homogeneity of data. This is an important feature as even in a developed country like the US more than 50% of data still comes from paper. This data is OCR'd and validated before being sent to fill the relevant fields within the DMS of an enterprise.

3. How do you ensure security of data that's coming in from various sources and also the meeting of regulatory compliance requirements that are so stringent in some of the industries?

Our systems can work with any hardware and OS and even core-banking solutions. They also neatly integrate with all ERP and document management solutions. In the imaging industry, there are certain global standards to be followed and we ensure our solutions can work even within a 'non-Kodak' environment. The output is saved in all popular file formats such as .jpeg, .tiff, and .pdf. All this ensures tight integration amongst different business processes and ensure maximum security of information.

The financial services industry faces unprecedented challenges on a daily basis due to changing regulations, economic issues and high customer expectations. By putting a stringent DCIM policy in place, organisations can distinguish themselves through consistent and reliable customer service, and maintain a competitive edge while remaining within tight regulatory standards. Insurance companies encounter difficulties like high operational costs, service levels, claims management, etc, which can significantly damage an organisation's budget sheets. All this calls for information management solutions that can help streamline critical processes and assist in ensuring regulatory compliance.

4. What are the opportunities in India and where do you think digitisation can drive growth for such solutions?

Indian companies are already using similar technologies since the early 1980s. We already have solutions for global shared service centers, aeronautical service centers, etc in India. Now, with the government's push towards digitisation there is enormous potential for the DCIM industry. For instance, in the digitisation of land records,

making automated maps available where ownership details are visible, and more. The National Land Records project started in 2006 and is slated to conclude in 2020. Less than 20% of the records have been digitised till now, so you can imagine the scale of digitisation of information still required to give it the required thrust. We are upbeat about the size of the Indian market and growth potential here. We do face challenges in the form of educating customers about the need for such solutions but we are confident of the outcome.

5. What are your predictions about the DCIM industry in the near future?

This industry is witnessing 10% growth globally but in India we've witnessed 20% annual growth since the last three years. Increased growth shall push more innovation and we're already seeing scanners that can share multiple PCs. Apart from this, network scanners are coming in early 2016. Then you have mobile apps that let you connect to DCIM software and feed information into the DMS. You shall also be able to scan docs to mobile devices and capture and, send the information to the relevant business software. □

HAPPY CHRISTMAS & HAPPY NEW YEAR

2016



PLUG PC
₹ 6899/-
Buy Now @
www.rdp.online



one stop for all
COMPUTING needs



ZERO CLIENTS



THIN CLIENTS



MINI PC'S



DESKTOP PC'S

RDP Workstations Pvt. Ltd.

#403, Ashoka Capitol, Opp: KBR Park, Road no-2,
Banjara Hills, Hyderabad - 500034, TS. 040-6457 1110.

Free Demo: 1800 200 2444

www.rdp.in

How Transport Apps Have Impacted Travel for Indian Commuters

The relevant technological infrastructure, which married efficient back-end computation, along with robust end-user solutions have together ensured the immense popularity enjoyed by travel apps



– Vinti Doshi, CEO and Co-Founder of AUTOonCAB.com

It is said that after the discovery of fire, the invention of the wheel was the single most defining landmark in the history of mankind. Five years ago, the daily Indian commuters would have disagreed passionately. The logic behind such whole-hearted disapproval of anything on wheels was quite straightforward – the Indian consumer had given up on the existing transportation solutions. The public commute was too crowded and time-consuming, whereas semi-private measures such as autos and taxi cabs were notoriously hard to come by in case of an urgent transportation requirement. Premium taxi services were often too pricey to even contemplate using on a daily basis. The state-of-affair had deteriorated to an extent where the commuters were willing to pay over and above the fair rates just to ensure that they could travel. Not the most ideal of situations, all things considered. It was the dawn of the digital age and the development of transport-centric apps that redeemed the wheel as an invention in the mind of the Indian consumer.

The business model of these applications revolved around providing viable transportation solutions to the daily commuters by offering a platform for commuters and taxi drivers to connect with one another. Users could now book budget cabs conveniently by simply clicking on a button, while the drivers, armed with smartphones and GPS connectivity, could respond to these hails and offer their services. The fixed price metering approach meant the haggling over rates and journey costs were avoided altogether. Leveraging advanced technological framework,

“Leveraging advanced technological framework, satellite based geo-location and state-of-the-art capacity planning algorithms, travel apps have led the way for better transportation solutions.”

satellite based geo-location and state-of-the-art capacity planning algorithm, these ground-breaking apps led the way for better transportation solutions.

Why travel apps are so popular

There were several reasons why the transportation apps have achieved the kind of success that they have in the industry. Foremost was the technological infrastructure, which married efficient back-end computation with robust end-user solutions. Other things that have really driven the adoption are the convenience associated with using these apps. Whether it was scheduling a cab, cancelling a booking or making a payment, transport apps made everything available at the click of a button. That, combined with the relative cost-effectiveness, swiftness and reliability as compared to the existing booking alternatives, was what made transport apps the default consumer behaviour of the country's commuters.

But the transportation revolution isn't done just yet. Having aggregated cabs onto their platforms, the on-demand transportation solution providers have now gone a step further by integrating auto connectivity as a feature on their applications. This increases the user choices by providing them with even more options to explore, making anytime local travel extremely convenient round the clock. Moreover, these transport aggregators are also exploring other avenues related to transportation. Certain apps have partnered with online food ordering platforms to deliver food to consumers, whereas yet others have ventured into the last-mile logistics for urgent delivery. Developments are also being actively pursued that would enable users to share rides with other users going to the same destination and leverage last-mile feeder connectivity by sharing vehicles. Looking at all that has come to pass and all that is still in store, it can safely be said that transport-centric apps have made an indelible impact on the Indian public transportation landscape, and will continue shaping it for a long, long time to come. □



**There isn't a Network
that we cannot
Secure & Manage**

TOTAL NETWORK PROTECTION

for Small Business, Corporates & Enterprises

eScan Security Solutions

- Data Theft Notification • Mobile Device Management • Asset Management • One-Time Password
- Enhanced Multi-layered Protection • Network Outbreak Prevention, Live Events & Reports
- Enhanced Endpoint Security • Monitors Devices Connected Within the Network

Toll Free: 1800 267 2900 | Email: ask@escanav.com

MicroWorld Software Services Pvt. Ltd.

CIN No.: U72200MH2000PTC127055

Plot No. 80, Road No. 15, MIDC, Marol, Andheri (E), Mumbai - 400 093

www.escanav.com

Managing Business Risks Through Asset Security Management

Encryption of critical business data that minimizes security risks, meets privacy and regulatory compliance requirements and is easy on the users is the minimum security threshold required by any organisation

– Rahul Kumar, Country Manager & Director, Winmagic India

Data is considered as an asset for a company and managing assets becomes substantial. The security experts opine that it is a necessity for all the companies to encrypt their data to minimize data breach. Latest, IBM reports stated that data breach has been incessantly growing upto 23% since 2013, which is statistics to worry about. The cost of data breaches is rising for companies around the world including India. The total average cost of a data breach is now \$3.8 million, up from \$3.5 million a year ago, according to a study by data security research organization Ponemon Institute.

According to a survey done by PricewaterhouseCoopers (PwC), the average cost due to security incidents for Indian companies more than doubled from \$194 in 2013 to \$414 in 2014. Heavily regulated and operational industries like healthcare, pharmaceutical, Bank and Financial service Industries (BFSIs) are the ones that are affected by the data breaches as much as 70% more than any other sectors. It is important to understand at this point a solution that will answer and identify the need to secure data.



Rahul Kumar
Country Manager & Director,
Winmagic India

“The cost of data breaches is rising for companies around the world including India. The total average cost of a data breach is now \$3.8 million, up from \$3.5 million a year ago.”

What exactly are the key drivers towards creating a solution that secures data and curbs data breaches?

Understanding the Market

It is important to understand the market demands and provide a solution accordingly. The market trend that is noticeable in India is that companies are willing to invest in data security, as it was evident by the 2014 reports, which was considered to be “The Year Of Data Breach”. It hence becomes inevitable for data security providers to focus on the specific needs of a customer rather than take a “one size fit all” approach. Organizations today understand that these breaches and their repercussions have ceased to become an IT problem. Today they are looked at, as a business issue and not only an IT challenge.

Product Development

As a dexterous move it is inevitable for any encryption company to invest in technology for managing forthcoming challenges. It is hence required to focus on encryption resulting at 360 degree product development to meet those issues. It is judicious for a service provider to focus on product development primarily and be abreast with the technologies of tomorrow to minimise business risk. From customer side, early adapters or forward-thinking ones are looking at getting the best of breed technology solution, and to curb data breaches with best product in the domain. It is also important that at this critical time data security solution providers helps the customers by providing the control of the access of the data that will be easily manageable.

Managing heterogeneous platforms

It is crucial to understand the pulse of the core issue of data security. With the increasing trend of the BYOD, data

security becomes vulnerable. It is hence important for the data security providers to ensure the security of data at rest by managing how it's encrypted. It is also crucial to understand the versatility of the platforms and available options for the solution providers that secures the data wherever it is stored, providing enterprise grade data security policy and key management across all operating systems such as Windows, Mac OS, Android and Linux. The movement of organizations toward cloud has added another layer of complexity to this entire scenario. Robust data availability and data security in varied platforms including that of cloud will only give a breather to the users with the plethora of operational platforms.

Intelligent management of keys

There has been noticeable and increased concern about managing encryption keys in an organization. Managing the key is the biggest challenge that the industry is facing. Creating a single and centralized location for the keys from where it can be easily managed, and assigning individuals with different accesses to ensure only authorized users get access to the data they have access to, is of utmost importance. It also, becomes indispensable to manage the keys to the security of the corporate data from a centralized solution to intelligently manage everything encryption.

Recovery of data

A recent study from IBM also states that only 38 percent of companies have a security strategy to protect its IT infrastructure. At the same time, password recoveries also play a crucial role. A higher percentage (45 percent) has a strategy to protect their information assets, however if they are implemented or executed in a proper way is the biggest challenge. So, the job does not end only by encrypting the data it also becomes a necessity to create a secure ecosystem to help provide recovery of data. This is the single biggest challenge in an encrypted environment that customers today face..

Development and implementation of structured programmes to educate users becomes foreseeable, understanding the needs of an organization and solving those challenges becomes a necessity. In regards to the rising marketing demands in India more focused solutions are required to meet the market demands of data security. Data encryption software that will minimize the business risk, is easy and transparent to use and can be managed effortlessly - is what is needed by the industry. Hence it is indispensable to have a comprehensive encryption and security management product that can manage data security across enterprises and platforms. □

PCQUEST

India's leading IT Magazine, is available on iOS, Android Tablets and Smartphones!

Get the hottest tech news, trends, product reviews, comparisons, software sneak peeks and much more - on the go.

Subscribe to the digital issue of PCQuest on:

Zinio: <http://www.zinio/pcquest>

Magzter: <http://bit.ly/PCquestMag>

Readwhere: <http://ld2.in/4ft>



TECH PREDICTIONS 2016

The key buzzwords in technology have moved beyond the hoopla and entered the more serious phase where real action is taking place amongst organizations to implement them. We take a detailed look on the key technologies that we love to follow, how they've shaped up thus far and where they're headed for in the near future

- Adeesh Sharma



When 2015 dawned upon us, it also brought forward the ensuing buzz around hot new technologies that were much talked about during the previous year- Smart cities, IoT, Digital India, Mobility, Ecommerce, Cloud Computing, and so on. At the outset, all these technologies promised a lot of action and advancement in the way we live and how we conduct our businesses. So it was natural for people expect a lot of action around them in 2015—in the way people devised their strategies around them, the budget they allocate, and collaborations amongst vendors to finally implement them. Well we were not to be disappointed and actually witnessed a lot of talk around all these key building blocks. Now as another year beckons us, it's only logical that we look forward and analyse what direction these technologies are headed towards.

Ecommerce and Online Retail: Benefitting from changing consumer behaviour

What used to be a retailer's turf about two years back, with sellers controlling the buying behaviour of consumers, the advent of budget smartphones and big online marketplaces have completely changed how consumers shop. With information available at the swipe of a mobile screen, the pressure is on retailers to offer competitive prices to even survive let alone grow in the market. Marketing automation tools, customer data analysis through algorithms, content marketing, and customer interaction management technology are some of the sought after technologies that retailers need today to gain more insights about consumer behaviour. And companies that don't, are at the receiving end of customer despair and stagnant or zero growth, ultimately

leading to extinction. Ecommerce value in India is said to hit \$16bn by the end of 2015 and cross the \$100bn mark in the next five years. Even if technology is accounted for this transformation, changing customer demands and interaction platforms is what is fuelling the change.

IoT: A lot more waiting to unleash

Whenever you think of IoT, you start thinking about a million, maybe a billion, smart devices and how they could be made to interact for a broader network of connected, intelligent devices. Closer home to reality, you already see intelligent devices around in the form of fitness bands, watches and eyeglasses that assist you in daily tasks, providing data such as fitness tracking, vital figures and weather amongst others. We also know that IoT has a great potential to revolutionize fields such as healthcare, automobiles, personal appliances and industrial equipment, amongst others. Driverless cars are a great example of IoT in action, wherein the car collects real time traffic data from GPS to navigate the best possible routes and also communicates with other cars to avoid collisions. In healthcare, IoT devices can enable remote health monitoring to measure blood pressure, heart rate and also management of advanced devices such as pacemakers and hearing devices.

Cloud adoption is expected to increase significantly in the near future due to improved cloud hosting facilities and faster internet speeds. So, tailor-made IoT cloud service connected with smartphones and tablets will plausibly become the norm, allowing users to analyze and use vast datasets in real time for improved efficiency.

Cyber Attacks: How they threaten Smart Cities

Smart Cities inherently inculcate the basic tenets of IoT while adopting solutions that address the myriad problems including parking and traffic, clean water, air pollution, landfill waste, and deforestation. Inevitably, these cities shall witness a massive flow of information from devices especially when you consider the evolution of analytics, availability of real-time information and the proliferation of devices within them. This is where the security risks come in. Anything connected to Internet is vulnerable to a cyber-attack and can be easily compromised using a number of threat factors such as Denial of Service (DDoS) attacks, web application attacks and insider misuse.

Having said that, it is rather difficult to be absolutely certain about what the specific risks are with since IoT is still in a very nascent stage. But, what we do know is that of the estimated five billion enterprise devices that will exist in 2020, only a few will be internet-visible, and still fewer will be used to transmit sensitive data. The benefits do outweigh the risks involved in the implementation of this concept. But the fear of the evolution of these risks

remains, which could result in utter chaos across different factions in the world.

Smartphones and mobile devices: Get ready for more

As the smartphone industry grows by leaps and bounds, manufacturers are gearing up to entice users by giving them more processing power and speed, and at all possible price points. Exterior design will not be the center of attraction in 2016 as we have already seen slimmer, bigger screen size and even curved display smartphones this year like LG G Flex. Next year major vendors like Apple, HTC, Samsung and Xiaomi are looking on the inside components to stay ahead of each other. We have been witnessing more powerful chips with each passing year and 2016 won't be any exception. Chips next year are expected to deliver better battery life, virtual reality and other features to offer seamless user experience.

Storage: More bytes, less bucks

Though a long way to go, but flash-based products like SSDs are surely going to be the game changer in the next couple of quarters at least in the professional series desktop and laptop segments. With very low power consumption, extremely fast data speeds, small foot print, availability in a wide range of configurations, these are surely going to be the segment to watch out in the near future. As the cost of flash declines, we believe flash adoption in the enterprise will continue to grow as a result. According to an APJ survey conducted by IDC, organizations in India emerged as strong early adopters of all-flash array (AFA) storage systems, with 21.3% of the organizations already having the systems in production.

Smart Automobiles: That's where the world's driving towards

Greater integration between the technologies in automobiles, mobile devices and infrastructure will change how we interact with the devices that move us from one destination to another. The existing infrastructure for motor vehicles simply cannot sustain the sheer number of vehicles expected to be on the road in the coming years. The future roadmap, therefore, has to include not only smarter cars but smarter roads and smarter cities. It's an approach that recognizes that sometimes the solution may not just be a smart private car but shared ownership models, ride sharing through mobile apps, or a multi-modal journey that requires a combination of different types of transportation solutions.

In the pages that follow, you get to know a lot more about the action happening within these IT domains, with key instances of Indian organisations are going to be impacted, and lots more. □

Wi-Fi: The Glue that Binds IoT

Amongst all technologies, Wi-Fi has shown to hold the highest success rate providing the connection for IoT – acting as the glue that actually brings devices together

- Ryan Goh, Vice President and General Manager of Zebra Technologies, Asia-Pacific

The term “Industry 4.0”, also known as the “fourth industrial revolution”, was coined by Germany in 2011, in a bid to promote computerization of machine manufacturing.

After merely four years, Industry 4.0 has transcended the imaginary realm to become a reality in our daily lives. Driven by the “Internet of Things” (IoT), the full realization of Industry 4.0 calls for a ubiquitous and standardized connection to transmit data amongst the machines, from machines to people, and vice versa. Ryan Goh, Vice President and General Manager of Zebra Technologies, Asia-Pacific, explores how Wi-Fi acts as the glue that connect all these “things” together and will be an important pre-requisite to make Internet of Things widely available amongst Indian audiences.

Need for a standardized technology and scalability

At the core of IoT are millions of devices that transmit data to centralized systems. These information may be variables ranging from humidity and temperature, to the location of people, or movement of goods. The captured information is then transferred to the cloud or other devices (“things”) to be exchanged or analyzed.

Connectivity plays a critical role in the success of connecting devices together, and the options today are

plenty: Wi-Fi, Bluetooth Low Energy (BLE), RFID, NFC, just to name a few. Determining which solution to adopt is dictated by several factors, including the environmental (i.e. presence of concrete, wood, metal), the density of sensors, desired range of connection, and speed.

Amongst all, Wi-Fi has shown to hold the highest success rate providing the connection for IoT – acting as the glue that brings devices together.

With an exploding number of – potentially infinite – nodes that need to be connected, the coverage and capacity of connecting devices will have to be increased rapidly. And the 802.11ac standard is capable of addressing this demand.

Therefore, expecting Wi-Fi to be the major enabler of IoT would not be wrong and the coming years will show momentum towards this. If we look at this in the India context, there is absolutely no doubt about it, as making India Digital is one of the biggest visions of our current government. Even at the state level lot of governments have included a project to make the entire city Wi-Fi enabled in their pre-election manifestos.

Need for speed

It took six years for the industry to move from the earlier 802.11n standard to today's 802.11ac networks. It may seem like eternity in technology, but it was well worth the wait. The biggest benefit of the 802.11ac standard is its unprecedented speed on the 5 GHz band - “more than 10 times the speed that was previously standardized”, which improves wireless local area network (WLAN) user experience by many folds. On both 2.4 and 5 GHz bands, 802.11ac is also able to support up to 100 users each.

At the same time, networks need to be 1) scalable to cope with increased demand;



“The IoT is estimated to reach approximately 38 billion “connected (autonomous) things” by 2020.”

— Ryan Goh
Vice President and General Manager of Zebra Technologies, Asia-Pacific

2) versatile to connect different devices and operating systems; and 3) highly secure to protect corporate data. Your wireless system needs to cope with growing demand for speed and capacity. And it must deliver the same performance – in terms of reliability and security – as a wired network.

The 802.11ac standard enables more efficient spectrum use, high capacity, and reduced latency. This standard is particularly good for devices with limited antennas, such as smartphones or tablets. It is predicted that, by 2018, 802.11ac access points will replace all legacy 802.11n systems.

Need for security and privacy

According to Juniper Research, the IoT is estimated to reach approximately 38 billion “connected (autonomous) things” by 2020. But the sheer number of connections between/among devices means it is almost impossible for system administrators to keep an eye on every communication – increasing the vulnerability of malicious attacks.

In many industries that have started utilizing IoT, information is being transmitted without deliberate intervention. For example, in manufacturing, forklift operator data can be transferred to the server without requiring the driver to download the data after each shipment. This would demand that the endpoints and the network are both adequately protected and secured.

To protect the data, property and privacy of organizations, employees and guests, Wireless Intrusion Protection Systems (WIPS), such as Zebra’s AirDefence, play a critical role in detecting and defending networks from intrusion, and quickly remove any rogue devices on the network. IT managers should pay attention to how fast and the number of threats (or events) their chosen solution is able to handle in case of security breaches.

The future for wireless networks and IoT

A recent survey conducted by Zebra Technologies in conjunction with Forrester – aggregating results from retail, hospitality, and transportation and logistics (T&L) sectors in the United States and Europe – showed that more than 60 per cent of them are in the process of expanding or planning to implement technology to tap into IoT; among them, more than 50 per cent have recently refreshed their wireless infrastructure to prepare for new devices and services. And Asia-Pacific companies including India will undoubtedly follow this path.

Looking at the upward demand for IoT, as well as the features and abilities of Wi-Fi, it is clear that Wireless is the glue that brings everything together. The industry will continue to see breakneck developments of IoT applications in multiple industries, and the role of Wi-Fi will continue to be instrumental to every connected world and be increasingly important in years to come. □



IoT Shall be the Next Big Force to Drive Mobility

IoT represents the next boundless wave of technology enabled by mobiles and the endless possibilities it holds in improving our lives. Here we discuss the key trends emerging in this domain

- Dilip Modi, Chairman, SpiceConnect

The Indian economy has undergone many significant changes post the economic reforms in the 1990s. In the first two decades of the 21st century, the country witnessed a mobile phone revolution, thereafter progressing to the smartphone and now towards high speed mobile internet. This rapid technological evolution has opened up new avenues for innovation and economic growth for the country by connecting people to the internet and creating opportunities for intelligent product design.

Analysts predict that the next revolution in consumer technology will be connected devices, wherein millions of devices will be able to communicate with each other directly. This wave of technology has the potential to significantly enhance the quality of our lives through the seamless connectivity of multiple devices through the internet and cloud.

As per Wikipedia, The Internet of Things (IoT) is the network of physical objects or "things" embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data. The Internet of Things allows objects to be sensed and controlled remotely across existing network infrastructure, creating opportunities for more direct integration between the physical world and computer-based



“Platform-to-platform integration will be the key towards creating a seamless interface and experience between things and end users, Product design will become one of the most watched spaces in the future as consumers will increasingly expect smart product design equipped with the necessary embedded sensors connecting the device to their mobile devices and IoT systems.”

— Dilip Modi
Chairman, SpiceConnect



systems, and resulting in improved efficiency, accuracy and economic benefit. Each thing is uniquely identifiable through its embedded computing system but is able to interoperate within the existing Internet infrastructure. Experts estimate that the IoT will consist of almost 50 billion objects by 2020.

The ubiquitous smartphone is actually the first widely accepted IoT device which features multiple sensors such as an accelerometer, gyro meter amongst others. Modern smartphones are capable of measuring and recording our heart rates, blood pressure, daily steps taken and a host of vital statistics. In the future the smartphone could become the central hub device, sharing these data points to other connected consumer devices such as air conditioners, air purifiers, health monitors and lighting systems to dynamically control our room environment as soon as we enter a room.

How IoT is Going to Impact Us

Wearable devices such as fitness bands, watches and eyeglasses are already enhancing our technology

experience by measuring and reporting data such as fitness tracking, vital figures and weather amongst others, enabling us to make smarter daily choices. IoT has a great potential to revolutionize fields such as healthcare, automobiles, personal appliances and industrial equipment. Through intelligent machine to machine communication (M2M) and Radio Frequency identification (RFID), equipments and devices can record and exchange data, process information and generate machine commands. Driverless cars are a great example of IoT in action, wherein the car collects real time traffic data from GPS to navigate the best possible routes and also communicates with other cars to avoid collisions.

Several connected appliances are already available in the market, case in example are air purifiers which allows users to monitor and control air quality levels in their homes using their smartphones. In healthcare for instance, IoT devices can enable remote health monitoring measuring blood pressure, heart rate and also management of advanced devices such as pacemakers and hearing devices.

Cloud adoption is expected to increase significantly in the near future due to improved cloud hosting facilities and faster internet speeds. Tailor-made IoT cloud service connected with smartphones and tablets will plausibly become the norm, allowing users to analyze and use vast datasets in real time for improved efficiency.

Furthermore, new devices are expected to be developed across more sectors such as smart homes, smart industrial equipment and energy efficiency amongst others. Platform-to-platform integration will be the key towards creating a seamless interface and experience between things and end users, Product design will become one of the most watched spaces in the future as consumers will increasingly expect smart product design equipped with the necessary embedded sensors connecting the device to their mobile devices and IoT systems.

Internet of things represents the next boundless wave of technology enabled by mobiles and the endless possibilities it holds in improving our lives. A key prerequisite for this progress will be policies that allow mobile internet to expand swiftly in the country to match pace with connectivity demands of consumers and our economy. Government policies that support high speed wireless connectivity should focus on making more spectrum capacity available for mobile and other IoT tools, and also increasing investment and infrastructure in targeted research to encourage innovation in this sector.

However there is no doubt that mobiles and IoT are inseparable partners in the future of technology. As part of IoT ecosystems, mobiles will play a critical role in the collection, management and use of data generated. □

Internet of Things: The Road Ahead

IoT is the future of our planetary ecosystem and brands need to integrate their strategy with this new trend. This is going to create a watershed moment in the history of technology in the next couple of years

- Sidharth Shekhar

Smart computational capabilities paired with high-speed internet are the main idea behind IoT and a big part of it depends upon the analysis of big data.

This interconnection between objects, people, locations and the Internet is made possible by wide variety of devices available across different platforms. IoT is going to revolutionize the way humans have interacted with smart technology. Wearables like smart watch and activity tracker is just one small step towards realizing a smart product which communicates with the customers and relays the collected data through internet. IoT will transform the marketing world in these ways:

- Exchange of sales data
- Smart CRM (instantaneous customer analysis)
- Predictive social network

However, in India it will take time to reach masses and is still in nascent stage. Just like advancement from regular phone to smartphone. General perception towards mobile phones changed from just being a talking device to a go to device for everything which in turn led to adoption and shift from Nokia 1100 to Microsoft Lumia. Things take time to get adopted on a mass scale and IoT is going to take a few more years before its real potential is unlocked.

IoT in India

Last year, Government of India announced about its plans to create a \$15 billion internet of things market in the country by the next five years. However, IoT is yet to create any major buzz in India as we lack the required infrastructure. Even the mainstream media apart from few tech publications have not started talking about IoT in any major way, and the vendor activity has largely been subdued to a large extent. Here are few prime concerns regarding IoT and its application in India:

Consumer IoT adoption to be slow

Due to various challenges like data security, lack of standardization, data ownership issues and ROI, consumer IoT adoption is expected to be slow in India. Apart from that Internet connectivity is still a major challenge in India which would pose a major threat for



The technological developments today are faster than ever. According to Dr. Jai Ganesh, Vice President and Head, Mphasis Next Labs, "Change and modernization in technology is a continuous process which will go on in 2016 and beyond." Some of the new technological breakthroughs that we can witness in the IoT space in 2016 are:

- Quantified self – where connected devices can record different aspects of human life like mood.
- Advanced big data analytics based predictive analytics
- Smart Machines - systems that use machine learning to perform work traditionally conducted by IoT standardization across protocols, messaging and descriptions
- Gartner, Inc. forecasts that 6.4 billion connected things will be in use worldwide in 2016, up 30 per cent from 2015, and will reach 20.8 billion by 2020. In 2016, 5.5 million new things will get connected every day. With both Government and private sector spending heavily on IoT, the sector will see a significant advancement, especially through:
 - Increased penetration of wearables
 - Robotics solutions
 - Increased adoption of Smart Home Systems, advancements in Smart Cities and innovations around connected cars domain
 - Reduction in cost of hardware, and the rise of IoT middleware

IoT applications. Security is another major concern for the IoT sector. With the rise in the number of wearables like watches and health bands connected to the internet (apart from mobiles, laptops, tablets, etc.), the number of web enabled devices increases significantly. However, this fast gaining access has raised new concerns around information security. In IoT, there are always some access/end points which are open and vulnerable to attacks and provide hackers an express-access to hack into the critical personal data like passwords and even sensitive corporate data through personal devices. So it is expected that enterprises will implement solutions that protect devices and information from data encryption, stronger user authentication across devices and standardized and tested APIs across devices and network. According to Dr. Jai Ganesh, Vice President and Head, Mphasis Next Labs, "Security and privacy are the two most critical concerns for IoT in the coming days. There is an increasing need to secure the entire IoT infrastructure right from the gateways that connects IoT devices to the enterprise network to the devices themselves. IoT infrastructure needs to advance from one-time authentication process to recurring as well as multiple authentication process."

Data mining and analytics

The collection and storage of data has to be improved with fully integrated tracking mechanisms. Also, maintaining your brands social presence is important as this will be a good source for data collection and future investment. So we can expect that IoT hardware technology will be integrated into products and packaging. All it requires is deeper linking, more data mining and analytics to get much more out of the collected data.

The future of IoT in India

According to a recent study by McKinsey Global Institute, IoT could add up to \$6.2 trillion in global value in the next 10 years. The Institute also projects that 80 -100 per cent of manufacturers will be using IoT applications by then. If 2015 was about the beginning of wearable technology then we can expect a lot next year. All the top brands like

"Due to various challenges like data security, lack of standardization, data ownership issues and ROI, consumer IoT adoption is expected to be slow in India. Apart from that Internet connectivity is still a major challenge in India which would pose a major threat for IoT applications."

Microsoft, Sony and Samsung are ready to launch their VR headsets next year.

Many of the real world applications of IoT are still taking shape but a lot is happening in the Indian start-up sector with variety of applications and products for consumers. Smart devices for automobiles are already available to the Indian consumers. Launched in 2012 CarIQ is a Pune-based hardware startup, which makes cars smarter by connecting them to the Cloud and allowing the car and its driver to make decisions based on real time data. It offers towing alerts, battery monitor, and social badges for drivers, along with personalized driving tips and export of all the data of your car.

With the rise in the number of smartphone usage content consumption has increased manifolds. Bangalore based start-up, Teewe works on a concept which is yet to find a foothold in India. It allows the users to access their content, from pictures to movies, on their TV through a single device which connects through Wi-Fi to the laptop; phone, remote storage, whatever the OS or the platform is. So, we can expect many interesting consumer-centric smart gadgets next year.

It leaves no doubt that IoT is the future of our planetary ecosystem and brands need to integrate their strategy with this new trend. This is going to create a watershed moment in the history of technology in the next couple of years.

Customer experience

Internet of Things and connectivity is driving consumers towards a digital life in every true sense. Brands now need to figure out how to track, monitor, and make sense of the ensuing troves of data and finding ways to stay relevant not only in the digital world, but in the physical world as well. Real-world behaviors will become the new click-stream, purchase path, cookie, and search term. Online and offline engagement is now converging just like the way media has converged.

IoT in commercial sector

The booming e-commerce sector is another key driver for the logistics industry. Tata Motors and VRL have already started putting sensors into their trucks and bus fleets, so that the owners can get information on how the vehicles are used, and even predict potential breakdowns. Major collaborations have been announced to explore IoT opportunities in transportation and other infrastructure sectors. In a nutshell, a lot is happening under IoT when we talk about the commercial sector.

IoT policy in India

While the government of India is coming out with an IoT policy, and with the stated plans of developing smart

cities, there is a significant scope for the growth of IoT in multiple government and utility services. Late last year, Tech Mahindra announced a tie-up with Bosch Software Innovations, to develop an ecosystem to enable innovative solutions for the connected world and connected enterprises.

Marketing and IoT

Indian e-commerce sector is one of the fastest growing markets and we know that brands rely on comprehensive metrics and measurement techniques to keep a track of their performance and website traffic. Consumer's interaction with mobile, wearables, connected devices, touchscreens, sensors, etc. will not fit into existing measurement approaches. This is an important concept for marketers to understand as they plan their digital strategies.

Marketing done through the Internet of Things will be:

- Seamless
- Able to eliminate friction
- Will provide value to the consumer
- Real-world behaviors are going to figure prominently in marketing agenda of the brands. The biggest changes are expected in the following fields:
- Marketing will become more of a quid pro quo
- Digital commerce will gain and great marketing will be decided through, superb content and high product value
- More number crunching will be required to interpret the data, and to create better interfaces to report and take action

Hot products of 2015

Cisco CIFS-IPC-7070 & CIFS-IPC-3050

Cisco Systems has introduced two new IP security cameras as part of its IoT ecosystem. The CIFS-IPC-7070 is a 5-mega-pixel HD dome camera, and the CIFS-IPC-3050 is a 720p



mobile dome camera. Both the 7070 and 3050 come in wired or wireless models. The cameras have built-in analytics, and can be integrated with sensors and controllers to give users a better view.

Amazon Echo

Amazon has introduced its smart-home automation device, Echo. Capable of voice interaction, music playback, setting alarms, stream podcasts, play audiobooks, provide weather, traffic and other real time information; it can also control several smart devices.



Dell IoT Gateway

Dell has introduced its new IoT Gateway which features a dual-core Intel processor and can be mounted on walls, desks or on a shelf.

It can help businesses collect and process data from disparate sensors or automation systems and also allows specific data to be relayed to the cloud or data center.



Nest Cam

Google introduced a Web-connected security camera called the Nest Cam. It allows the users to zoom in on different areas of their homes. It also includes sound and motion sensing features.

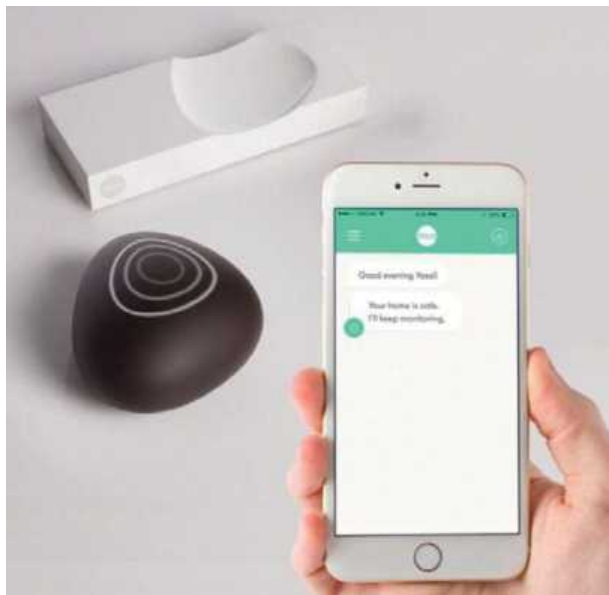


New Tech developments to be expected in 2016

Security will become the most important issue for IoT vendors. It will also be the biggest risk for enterprise failure. A very large scale hack of an IoT application or device is expected in 2016.

Secure smart home applications

More than 4 billion things will be connected to the Internet and most of these devices are expected to be in our home. However, the security of these devices is a major concern. Palo Alto based Dojo labs will protect all of your connected home devices from malware, viruses and cyber-attack. The software will automatically scan your smart home devices for unusual activity and if it finds something suspicious then it'll notify you via its smartphone app and proceed to block the activity automatically from progressing until further approval.



Connected cars

The C2C technology will enable cars to "talk" to each other to determine proximity and help avoid collisions. It has been approved by the US federal government and just requires a new law which will make it mandatory for all



new cars to fit the new technology. This is one of the core technologies backing Google's SDC project.

Hot Products to Expect in 2016

MasterCard

MasterCard is advancing its Digital Enablement Express program (Express) to transform how consumers interact and transact. According to the company, from 2016, every wearable device, accessory, or IoT connected gadget can be payment enabled.

Set to launch in early 2016, MasterCard's integrated payment solutions already have found support from many partners across multiple verticals.

Phree smart pen

This pen has an optical sensor at the tip that recognizes text and drawings when you write on any surface be it your arm, a piece of paper, or a wall. It then syncs whatever you write on your phone, computer or tablet, saving it in a program you are familiar with. It will be available in April 2016.



Apple Watch2

Apple Watch2 is the second-generation Apple Watch that is expected to arrive in mid- to late-2016, as reported by AppleInsider. The report also claims that the second Apple Watch would be thinner than its predecessor. It would feature a FaceTime camera, expanded Wi-Fi and new materials. The new Wi-Fi chip would allow the Watch to do more without an iPhone.



Conclusion

A sea of opportunity is going to unlock itself with the rise of IoT and time will tell whether the market is ready to accommodate itself to this revolutionary change. Work is continuously being done but a lot more is to be accomplished to reach maximum household. □

What's Coming Up in Smartphones in 2016

From foldable displays to battle of chips and power, here is what to expect from smartphones in 2016

- Anuj Sharma

Users will witness many new devices with foldable displays, improved optics, more powerful processors, longer battery back-up and much more. India witnessed some real action in the smartphone category in 2015 and is considered as the fastest growing smartphone market in Asia Pacific.

Battle of Chips: Apple A10, Snapdragon 820, Exynos 8, and Helio X20 To Bring More Power, Better Battery Life And VR To Smartphones In 2016

As the smartphone industry grows by leaps and bounds, manufacturers are gearing up to entice users by giving them more processing power and speed. Exterior design will not be the center of attraction in 2016 as we have already seen slimmer, bigger screen size and even curved display smartphones this year like LG G Flex. Next year major companies like Apple, HTC, Samsung and Xiaomi are looking on the inside components to stay ahead of each other.

We have been witnessing more powerful chips with each passing year and 2016 won't be any exception. Chips next year are expected to deliver better battery life, virtual reality and other features to offer seamless user experience.

Apple A10

Released last year, the iPhone 6s is the fastest smartphone in the market, but according to a new rumor, Apple is planning to make a huge leap with its A10 processor in the iPhone 7 that will turn the device into an unbelievable speed monster. Jumping from two core A9 chips to six-core architecture chips, the next generation A10 chip will focus primarily on multi-threading.

Expected Smartphones - iPhone 7, iPhone 7 Plus

Qualcomm Snapdragon 820

Qualcomm Snapdragon 810 chip didn't live up to expectations in 2015 and smartphones equipped with Snapdragon 810 suffered badly from overheating issues. The Snapdragon 820 features Qualcomm Adreno 530 GPU that is expected to churn out 40 per cent improved graphics performance compared to the Adreno 430 GPU. As previously announced, this chipset supports Qualcomm's Quick Charge 3.0, which is approximately 4x faster than conventional charging methods, and 38 per cent more efficient than Quick Charge 2.0.



1. Forget the phone; in 2016 it's all about the processor
2. Samsung to Launch High-End Tizen-Powered Smartphone
3. Improvements in battery technology
4. Samsung to Release Foldable Smartphone in January 2016, Will Feature MicroSD Slot and Non-Removable Battery.

Like the 810 chip, the 820 will once again support 4K displays, but it's not official yet whether Samsung and LG will update their 2K screens to 4K, though 4K does opens up big opportunities in virtual reality (VR).

Expected Smartphones - LG G5, Samsung Galaxy S7, HTC One M10, Sony Xperia Z6, Nexus 7, Xiaomi Mi5

Samsung Exynos 8

With the Exynos 8 Octa 8890, Samsung will follow Apple's footsteps as the new chip will be designed around ARM's processor architecture. The chipset is likely to support 4K video resolutions thanks to the Mali-T880 graphics chip, which means that we can expect Samsung to debut a 4K smartphone or tablet in 2016.

Expected Smartphones - Galaxy S7 and S7 Edge, Galaxy Note 6, Galaxy S7 Edge+

MediaTek Helio X20

Taiwan's MediaTek is known for powering majority of low-end smartphones coming out of China in recent years. The Helio X20 will power mid-range smartphones that can offer the experience of a flagship for the price of a midrange device. One of the key features of X20's is its 10 core architecture organized in three clusters which are

aimed at handling light, medium and intensive workloads. According to Mediatek this new chipset will consume 30 per cent less power.

Expected Smartphones - HTC One M10, Xiaomi Mi5, Acer Predator

Smartphones with Foldable Displays

Samsung showcased a Note 4 variant with a curved display last year, and this year Samsung unveiled Galaxy Note Edge featuring a curved edge screen on one of its sides. It also released the Galaxy S6 Edge and the Galaxy S6 Edge+ with dual edge curved display. It is expected that the Korean giant is going to bring some interesting smartphones with foldable display technology in 2016. Codenamed Project Valley or Project V the devices will be available in two internal storage options. One of them will be featuring the Snapdragon 620 chipset whereas the other one will be coming with the Snapdragon 820 chipset. Both the handsets will be featuring 3 GB RAM.

The technology will have some positive impacts on smartphone usage. Curved or foldable displays offer better visibility of content because they tend to cause less reflection of light, which in turn leads to better color contrast and accuracy for reading or watching videos. This also means less consumption of battery as a display with better viewing angles requires less brightness. The technology can also enhance portability as a foldable display will turn a 10

inch tablet into a regular 5 inch device for a convenient fit in your pocket.

Battery Revolution: Time to Power Up in 2016

While smartphones are growing more advanced and are becoming as powerful as laptops but with high-definition screens and professional camera technology they're still limited by power. The battery hasn't advanced in decades. But we're on the verge of a power revolution. Although as the mobile tech advanced, battery life has dropped from several days to roughly a day. If you consume more multimedia or play heavy games it is likely to last less than 5 hours.

Solidstate Battery

SolidEnergy's new technology works by replacing the battery's conventional graphite anode material used by most lithium-ion batteries with an ultra-thin sheet of lithium copper metal foil. This arrangement will reduce the size of the battery for the same capacity, allowing the saved space to be used for extra capacity. SolidEnergy has also successfully demonstrated that its prototype can go through 100 recharge cycles while retaining 80 per cent of its original energy than competing advanced Li-ion technology, meaning that non-replaceable batteries won't be such a problem in the future. The first commercial battery using this technology is scheduled to arrive for smartphones and tablets in 2016. In other words we could be very close to a battery revolution.

The innovative e-ink phone

Smartphone manufacturer Yota Devices has demonstrated an innovative way of lengthening a mobile's battery life in its YotaPhone 2. This dual-screen device looks resemble your phone, with one key difference - there's an e-ink display (like the Amazon Kindle's) around the back.

The basic principle is to use the low-powered e-ink touchscreen to check your notifications, read and reply to messages and only turning on the main power while watching video or surfing web. The idea can work wonders in near future, as those backlit displays are the main power-sucking element of any mobile.

Wireless charging

One of the new developments in battery tech is wireless charging that allows you to get rid of your power cables and add extra simplicity and ease to your life. The technology is still evolving and since most of the energy is lost between the charging station and the receiver, and the power transmitted has a one watt limit, just about enough to power a smartphone. But as research continues, we're

"The ongoing trend of affordable smartphones will continue in the coming year as well with expected launch of more mid segment smartphones which will fit the budget and deliver the best in class experience to the customers. The innovative nature of the Smartphone industry has been steadily gaining ground in recent years and in a competitive market, manufacturers look towards providing users with features that give their products the cutting edge. Fast charging, better camera quality, fast data speed/quality and low-cost data connectivity options with introduction of 4G will be major game changers in 2016."

- Mike Wang, CEO, OPPO Mobiles India

hopeful that wireless charging will replace those irritating cables entirely in upcoming years.

Flagship smartphone wars will more intense

Sony is expected to bring the successor of its flagship Z series with Z6 and some affordable smartphones that will be powered by MediaTek chipsets and will compete with the domestic smartphone manufacturers. The HTC One M9 impressed us with unibody design and top notch camera. So, we expect HTC to continue that with HTC One M10 which is said to be powered by the Qualcomm Snapdragon 820 processor having 3GHz of speed and featuring a 4K display. Similarly, the much praised LG G4 with its laser autofocus camera will see a successor (LG G5) with improved set of optics and faster processing power.

New entrants will continue to keep established players on their toes

Motorola's G series got famous by launching low-cost handsets with good specs, but this year's Moto G (3rd gen) didn't impressed us much and did not live upto the same expectations as its predecessors. It will be interesting to see if Motorola Moto G (4th gen) will be able to reclaim the budget Android crown back. It is expected to include a Full HD display. If Motorola manages to bring Full HD screen in a low-priced device which the competitors have not accomplished yet, then it could be the device worth checking out.

Asus has successfully captured a large segment of the market with its Zenfone series which is affordable yet feature rich. It is expected to showcase Zenfone 3 series in January 2016 at CES. OnePlus 3 will be a successor of OnePlus two and the device is said to be more efficient and powerful than its previous version. The Oneplus two is famous for its camera and performance and the next device may come at the end of the year.

Chinese smartphone maker Xiaomi has made its name by introducing budget high-end smartphones. The upcoming smart phone is said to have Ultra HD 2160 x 3840 pixels Super AMOLED display, Qualcomm Snapdragon 820, 4GB RAM and 21-Megapixels back and 13-Megapixels front camera.

The domestic players will continue to grow

Domestic players such as Micromax, Spice and karbonn will also introduce their share of smartphones and will continue to maintain a large share of the market. This year Micromax has already launched some affordable 4G LTE devices powered by Snapdragon 210 chipsets. It will be interesting to see what micromax has to offer in 2016. We can also see the more of Android One devices ranging between Rs. 6,000-12,000.

Hot products to be expected in 2016

Apple iPhone 7

The Cupertino giant has always kept its rivals on their toes with their iPhones. Continuing that tradition iPhone 7 will pose a major threat to all the competitors and is sourced to pack a number groundbreaking features. According to Apple, iPhone 7 will have an integrated projector allowing you to display presentation slides; the battery will be built with organic materials thereby will be more efficient. The most amazing feature of the device will be "The Protective Mechanism for Electronic Device." It will keep the display undamaged even though it falls accidentally from your pocket or hand. It will also pack the quad-core processor, A10 chip and 20-MP rear iSight camera making it a powerful contender for the smartphones to watch out in 2016.



LG G5

LG G5 will equip a faster Qualcomm Snapdragon 820 hexa-core processor with whopping 5GB of RAM. With the 5.6-inch display, 20-MP rear and 5.1-MP front shooters and features like dustproofing capabilities, shock proofing sensors, wireless charging technology and Retina eye scanner LG will try to outsmart the Galaxy smartphones and the iPhones.



Samsung Galaxy S7

This year, Samsung has achieved a huge round of applause with the Galaxy S6 smartphones. The next-generation

Galaxy S7 will have the faster 2.9-GHz octa-core processor, 4GB of RAM and 5.2-inch P-OLED display. According to Samsung, S7 will pack 30-MP and 7-MP shooters to capture vibrant photos.



HTC One M10

It is said to be powered by the Qualcomm Snapdragon 820 processor having 3GHz of speed. The device may also equip the latest quad-core chipset, 4GB RAM, a 3,500mAh battery, and 64GB and 128GB internal memory variants. It will pack either a 5-inch or 6-inch display with a resolution of 1440 x 2560 pixels. Rumor has it that the HTC One M10 may have an ultra-high definition display of 4K pixels.



Microsoft Surface Phone

The Surface Phone is expected to arrive in 2016, with a 5.5in Quad-HD AMOLED display, 4GB of RAM, 64- and 128GB storage options (with microSD support), a 64-bit Intel processor and 21Mp rear- and 8Mp front cameras. The Surface Phone could also get a Surface Pen and a USB-C port.



The Attention Seekers of 2015

Apple iPhone 6S and 6S Plus

As can be expected from an 'S' year, the next-generation iPhones don't look all that different from last year's models. However, the innards have been significantly tweaked. The new iPhone 6S is also available in a new Rose Gold color option and a 12Mp iSight camera with support for 4K video recording. Apple has also introduced a feature called 3D Touch, which shows an extra dimension to the screen you're used to. Using Force Touch, which is already available on the Apple Watch and on new MacBooks, users can hold down on various apps to both 'peek' and 'pop'. As is standard with Force Touch, the iPhone will offer haptic feedback as a part of the 3D Touch experience.

The only major difference between the two phones is their screen size, dimensions and weight. With a higher-resolution 5.5- rather than 4.7in screen, the iPhone 6S Plus is necessarily larger and heavier, at 158.2x77.9x7.3mm and 192g. It also has a larger-capacity battery.

ASUS Zenfone 2

Asus introduced the big boss of multitasking- Zenfone 2 by integrating 4 GB of RAM. However, what makes this even more interesting is the pricing at which the company is offering it and is available at half the price of the flagship of biggies. In terms of storage, 32GB is onboard, and you can get more through microSD. There's 4G LTE support (dual-SIM, dual active), a 5.5in full-HD IPS screen, and 13Mp rear- and 5Mp front cameras. Running the fully customizable ZenUI software, the Zenfone 2 also comes with Trend Micro security preinstalled. The Asus Zenfone 2 is well worth a look.

Google Nexus 5X

Google India launched its latest range of Nexus phones in partnership with smartphone makers LG and Huawei. It comes with a 5.2-inch Full HD screen and 2700 mAh battery. At the back is a 12.3 MP camera with laser-assisted autofocus while at the front is a 5 MP camera. The phone is powered by a Qualcomm Snapdragon 808 SoC with 2 GB of RAM and runs on Android Marshmallow.

Samsung Galaxy Note 5

Galaxy Note5 is bundled with a 5.7-inch QHD (1440x2560p) Super AMOLED screen that supports the company's proprietary S Pen stylus. The smartphone is powered by Samsung's 64-bit Exynos octa-core (2.1GHz quad-core + 1.5GHz quad-core) processor. It has 4 GB RAM and comes with two variant of internal storage - 32 GB and 64 GB running on Android 5.1 Lollipop. Samsung claims the Galaxy Note5's new S Pen feels more solid and balanced in the user's hand, offering improved writing capabilities and



a variety of tools. It allows users to quickly jot down ideas or information even when the screen is off without even unlocking the phone. Users can also annotate on PDF files and capture lengthy web articles or long images at once via Scroll capture.

LG G4

The LG G3 was one of best phone you could buy in 2014, and things just get better with the LG G4. Key specifications include a Qualcomm Snapdragon 808 processor, a 5.5in Quad HD IPS Quantum display, 32GB of storage (with microSD support) and a 3000mAh removable battery. With a slight curve in its screen and leather back the LG G4 is a refreshing change from the traditional flat and metallic phones. The 2,560x1,440-pixel resolution and 534 pixels per inch (ppi), puts it above the Apple iPhone 6, Galaxy S6 and HTC One M9. The device offers 2GB of onboard storage and a microSD card slot that can hold up to 2TB.

Samsung S6 and S6 Edge

These are the first smartphones from the Korean giant which are completely built by metal and glass. Both the smartphones feature 5.1-inch Quad HD (1440x2560 pixels) Super AMOLED display with a pixel density of 577ppi. However, the S6 sports a dual-edge display. Under the hood is an Octa-core 4x2.1GHz + 4x1.5 GHz 64-bit Samsung Exynos chipsets with 3 GB RAM for multitasking. These phones run Android 5.0 out of the box and are the first in the world to feature 14nm mobile processors with 64-bit platforms, new LPDDR4 memory system and UFS 2.0 flash memory.

HTC One M9

The flagship smartphone features a uni body full metal design in gold and silver finish. It is powered by a top of the line octa-core Qualcomm Snapdragon 810 processor with 3GB RAM and 32GB in-built storage that can be expanded to 128 GB via micro SD card slot. The front features a 5-inch

Super LCD 3 capacitive touchscreen, which is a full HD display, unlike the Quad-HD panel on Galaxy S6. The smartphone also features the latest HTC Sense 7 over Android 5.0, which will bring new tweaking options for consumers. It is powered by a 2840 mAh battery unit.

OnePlus 2

It is powered by 64-bit Qualcomm Snapdragon 810 SoC processor coupled with 64GB of storage and eMMC 5.0 flash memory. Paired with 4GB of LPDDR4 RAM, the OnePlus 2 powers all your apps, games and videos. The 13 megapixel rear facing camera boasts 6 physical lenses, powerful dual LED flash, and f/2.0 aperture. The most impressive is the sensor, which contains large 1.3 μm light-collecting pixels to deliver color rich low-light shots. OxygenOS, based on Android 5.1, is a refreshing take on the pure Android experience. Subtle customizations like on screen gestures, dark mode, the ability to switch between hardware and capacitive buttons and toggle quick settings are baked in throughout the OS.

Samsung S6 Edge Plus

The Galaxy S6 edge+ blends a unique form factor to make the edge experience even better by including the best screen technology, the most advanced camera for high quality photos and videos, the latest fast wireless and wired charging, and an incredibly powerful processor. The increased 4GB RAM complements the powerful Exynos octa-core processor, enabling users to enjoy a seamless multi-tasking experience. The Galaxy S6 edge+ features 4K (UHD) video filming and introduces Live Broadcast, which lets users share live video in Full HD quality straight from the phone to any individual, group of contacts, or even the public through YouTube Live.

Sony Xperia Z5 and Z5 Premium

Xperia Z5 and Z5 premium are the latest additions to the Xperia family, which gives a different camera experience with 23 MP and 0.03 autofocus. The super-flagship Z5 premium redefines mobile entertainment with the world's first 4K UHD smartphone display and 4K Ultra HD upscaling technology. Both the smartphone are powered by the Qualcomm Snapdragon 810 processor, featuring octa-core CPUs, 64-bit capabilities and ultra-fast 4G LTE speeds, letting one reach new levels of performance for video, photography and gaming. Xperia Z5 Premium comes with 32 GB internal memory and has the capability to take a 200 GB external microSD card, which in turn offers extra space for 4K videos, movies, and images too. □

7 Key Trends That'll Impact eCommerce in 2016

From mobile wallets to payment banks, digital currency to social media transactions, there is enough action lined up in eCommerce in the near future

- Jayshankar Joshi, SME – Transformation service Line, Opus Consulting Solutions

M-Wallets will rule

Touch based mobile wallets like Android Pay, Apple Pay and even the OEM specific solutions of Samsung Pay and, recently launched, LG Pay have the potential to revolutionize our shopping experience by streamlining the payment procedure from the plethora of bank cards to one simple tap on an NFC reader. In the context of the Indian scenario expect to see proliferation of wallets like PayTM, which will focus on providing convenience to the customer while taking care of their security concerns.

Payment banks thrive amongst the unbanked and the under-banked

While the largest population of under-banked and the unbanked citizens may be in remote locations, in the big cities the younger members will choose to open mobile banking accounts with a payments bank.

New payments banks that have neither the reachability nor the requisite IT infrastructure will partner with existing telecom companies, pre-paid card issuers or third party payment-service providers with connectivity in rural areas. These alliances will provide a cheaper and faster way to deploy services to customers.

Security to become primary technology driver

The rapid adoption of biometrics authentication in mobile payments offers an opportunity for payment-service providers to provide an easier and more convenient authentication mechanism for access to iPhone electronic wallet credentials than having to remember and type a PIN. This convenience would eventually make this a preferred method for authentication, especially for Generation M (Millennials with a strong preference for mobiles). Fingerprint

technology will become quite well accepted compared to other biometric-identification technologies like hand or palm geometry, eye-iris scans or facial characters. Biometric authentication and tokenization will make security in NFC transactions far superior to any other method.

Digital currency will ruffle the remittance industry

Penetration of Digital Currency as a main-stream payment instrument will test the regulatory waters across the globe but will gain traction. Globally, most financial institutions are focusing on blockchain: the technology that underpins the bitcoin virtual currency. For bitcoin, the blockchain will act as a globally-distributed ledger that logs transactions. The technology will verify each deal that takes place with respect to bitcoin. This will allow people to collaborate without having to go through a neutral central authority.

Technology companies make inroads into banking and payment services

Technology companies like Apple, Facebook, Google will embed payment services in their overall customer experience. Typical examples are Apple launching P2P payments, payment services being enabled through WhatsApp, Facebook incorporating a Buy button for Facebook shopping.

Start-up community will force banks to innovate

Industry giants like BBVA, Rabobank, Wells Fargo, Barclays, Lloyds Banking Group, Bank of Ireland, Commerzbank, UniCredit, Credit Agricole, and many others have chosen to set up startup programs to incubate FinTech companies. While this as a global trend has been catching up, but 2016 should see Indian banks also jumping onto the bandwagon.

Predictive analytics will drive loyalty and reward programs

Today customer's location is not important – he could be physically in a store or shopping online on his tablet, but the analytics based on his browsing habits, checkout completion rate and type of payment method he is using will provide data points that help retailers make rewards programs more relevant to individual consumers. □



“Customer data and analytics will drive payment companies to support increasingly sophisticated retailer-funded rewards programs.”

— Jayshankar Joshi

SME – Transformation service Line,
Opus Consulting Solutions

Cyber Attacks in Smart Cities

Connected devices are viable cyber-attack targets, but attacking the device itself may not necessarily be the end goal. They could be manipulated to gain access into the larger enterprise network and its vital systems

- Harsh Marwah, Country Manager,
Verizon Enterprise Solutions India

People are migrating to urban areas in large numbers in search of better employment opportunities and living options. According to the United Nations prediction, around 70% of the population will move from the rural areas to live in cities by 2050, globally. Indian Prime Minister Narendra Modi has recognized the gravity of this large-scale urbanization and announced the creation of around 100 smart cities

across the country. The idea behind developing these smart cities is to improve each city's efficiency in terms of infrastructure, economy, environment and ultimately, the overall standard of living through the use of technology, specifically the Internet of Things (IoT). Together with cloud computing, and machine-to-machine systems, these solutions form integral components of a smart city. Technology is going to be at the heart of smart cities as

"In 2012, the United States of America experienced traffic light hackings which resulted in many road accidents and in November 2013 in San Francisco, the Bay Area Rapid Transit (BART) service was shut down by a software bug in the system which resulted in track switching."

— Harsh Marwah
Country Manager, Verizon Enterprise Solutions India





they facilitate a higher standard of living – connecting various devices.

With a whopping Rs. 48,000 crores allocated for the development of '100 smart cities', India is all set to witness the next phase of digital evolution. While this will no doubt create new revenue streams for telecom providers, infrastructure vendors and application providers, it will also encourage a tremendous amount of technological innovation which will be in the interest of all.

Security risks associated with IoT

IoT is being widely talked about in the context of smart cities owing to its applications in addressing the myriad of problems including parking and traffic, clean water, air pollution, landfill waste, and deforestation. A recent study concludes that by 2025, organizations which extensively use IoT technologies in their products and operations will be up to 10% more profitable and each person will have more than six connected devices. Inevitably, we will witness a massive flow of information from devices especially when you consider the evolution of analytics, availability of

real-time information and the proliferation of devices.

This is where the security risks come in. Anything connected to Internet is vulnerable to a cyber-attack and can be easily compromised using a number of threat factors such as Denial of Service (DDoS) attacks, web application attacks and insider misuse. As a result, security implications are becoming inevitably persistent.

In the event of a cyber-attack, an entire ecosystem can be completely crippled if foolproof systems haven't been properly implemented. Sensors in the equipment can be hacked and fed fake data causing signal failures, etc.

How cyber attacks threaten nations

There are examples of cyber-attacks which have created many real-time panic situations in many countries. In 2012, the United States of America experienced traffic light hackings which resulted in many road accidents and in November 2013 in San Francisco, the Bay Area Rapid Transit (BART) service was shut down by a software bug in the system which resulted in track switching. It affected 19 trains with about 500 to 1,000 passengers on board.

Verizon's Data Breach Report analysed almost 80,000 incidents including 2,122 confirmed data breaches. While IoT represents a new opportunity for cybercriminals, the report found that there were only minor data disclosures and negligible instances to report. Having said that, it is rather difficult to be absolutely certain about what the specific risks are with since IoT is still in a very nascent stage. But, what we do know is that of the estimated five billion enterprise devices that will exist in 2020, only a few will be internet-visible, and still fewer will be used to transmit sensitive data. As a matter of fact, a number of these devices may essentially serve a single function – as simple as a light sensor. Nevertheless, most connected devices, irrespective of whether they are IoT-enabled or not, are viable cyber-attack targets. Attacking the device themselves may not necessarily be the end goal, but they could be manipulated to gain access into the larger enterprise network and its vital systems.

The idea of 'smart cities' has brought with it the means to alleviate various concerns, including aging infrastructure, population growth and congestion to name a few. The benefits do outweigh the risks involved in the implementation of this concept. But the fear of the evolution of these risks remains, which could result in utter chaos across different factions in the world.

Government CIOs will do well to heed simple security mantras such as encrypting and backing up data and ensuring that employees have an easy avenue to report the loss or theft of devices as soon as possible. In addition, IT teams need to know exactly what data they possess and where it resides. □

Wireless Technology - The New Fad in Audio Entertainment

Brands are venturing into the wireless technology as demands for wireless headsets picks up with increasing smartphone adoption by the masses



- Kapil Gulati, Director Consumer Segment, Sennheiser

The audio industry has come a long way with time and now headphones are more than a bundled pair. Demands for advanced technology and visuals are increasing and portability on the go is the thing these days combined with great sound experience.

Wireless technology has metamorphosed the entire audio industry. Over the past decade, wireless communication has experienced several innovations. Besides basic communication, entertainment, commerce and service industries are becoming more dependent on wireless services. According to Mr. Kapil Gulati, Director Consumer Segment, Sennheiser, "Modern era belongs to the wireless world. The digital era has transcended to other categories like the audio streaming through the internet over devices like smartphones. New technologies are enabling larger bandwidth, thereby allowing the deployment of more complex applications across all the available platforms."

Brands are venturing into the wireless technology with leading international audio brands paving the way for what will be known as 'Future of Headphones Industry'. The Indian consumer electronics market is unique and over the last decade with advancement of technological innovations and the integration of technology in our lives gadgets have become a necessity. Wireless technology is catching everyone's attention. In the past 2 years, the



1. Market for wireless audio devices is estimated to reach \$24.52 billion by 2020
2. Users will shift from wired to wireless headsets at large scale
3. More high res audio devices to hit the market

wireless headphones market has grown from 1 per cent to 5 per cent and in the next 2 years it is expected to touch the 10 per cent mark. This segment is one of the fastest growing sectors in India and with the expected growth rate of 50 per cent it is welcome news for the audio industry. A report by Future Market Insights (FMI) reports that in terms of value, the wired earphone and headphone segment accounted for over 65 per cent share



“With operating systems and device capabilities that provide consumers more access to content and multimedia features, smartphones are transforming mobile habits across the world. To gain fastest access to these trends, headphones giants, through a dedicated research and development team, must incessantly focus on identifying global trends and customer attitude.”

Brands should be able to position wireless headphones as not just a home entertainment device but also a personal accessory, with advancement in technology making portability a reality. The sound quality is not compromised as Pure Path wireless link technology enables minimum loss of data, thus delivering the best interference-free sound and crystal clear audio experience. While lossless digital RF-transmission is perfect for high-end home stereo use, Bluetooth-equipped models work great with mobile devices and then there is innovative digital wireless technology which ensures that signal transmission remains clear and accurate as you move from room to room. It incorporates the transmission of audio analog signals encoded as digital packets over high bandwidth radio frequencies. Wireless headphones use digital wireless technologies to transmit audio signals.

Talking about 2016, the audio segment will be expanding both in terms of volume and reach with the headphones category contributing significantly to drive this change. The forecasts report a bright future for the wireless segment. As per Markets and Markets, the market for wireless audio device is estimated to reach \$24.52 billion by 2020, at a CAGR of 25.23 per cent from 2014 to 2020. Wireless headphones category will grow with consumers who have been using independent headphones from last few years switching to wireless headphones. Convenience and comfort would become the key reasons fueling the sales of wireless earphones and headphones. Apart from on-the go entertainment, the freedom to make hands-free phone calls offers pragmatic benefits, a feature that will find greater resonance among consumers. Another trend that is gradually becoming the talk of the town is ‘Silent Discos’ – a party where you dance to the beat you like and control the volume you can bear as the music reaches your ears through wireless headphones instead of a speaker system. Thus 2016 will be an exciting year to look forward to experiment with the wireless segment. □

of the global earphone and headphone market in 2014, while the wireless earphone and headphone segment is expected to expand at the highest CAGR during the forecast period. Though gradual, the shift towards wireless headsets has been significant with consumers finally realizing the potential of the category. Earlier consumer mindset was plagued by the perception that there would be some transmission loss with wireless headsets affecting overall listening experience. But with the introduction of innovative technology such issues are insignificant.

Smartphones have increased demand for wireless headsets

To create a place for this niche segment, it is important to feel the pulse of the consumer and decipher their expectations in a timely fashion to provide a desired product. Another important fact is that India is an important smartphone market globally which translates into infotainment consumption on-the-go leading to a demand for headphones. With operating systems and device capabilities that provide consumers more access to content and multimedia features, smartphones are transforming mobile habits across the world. To gain fastest access to these trends, headphones giants, through a dedicated research and development team, must incessantly focus on identifying global trends and customer attitude.

4 Key Trends That'll Impact Automobiles in Future

Greater integration between the technologies in automobiles, mobile devices and infrastructure will change how we interact with the services that move us from one destination to another

- Erica Klampfl, Global Mobility Solutions Manager, Ford Motor Company



Since the introduction of the automobile more than a century ago, personal mobility has changed radically. Cars have become more affordable to more people, and the global transportation landscape has shifted to become increasingly connected, urban and crowded. In all this time, however, one thing has remained the same: Personal mobility is about much more than just moving from A to B. It's about human progress, and giving individuals the freedom to choose how they move and improve their lives.

In 2012, Bill Ford introduced the Blueprint for Mobility, a vision for the future that provides solutions for short-, mid- and long-term mobility needs. It calls for private businesses, regulators, cities and countries to take action to address the transportation challenges ahead for a more sustainable and viable future.

In the early days of the automobile, Henry Ford helped put the world on wheels, making high-quality cars at an affordable price for the average worker. But today the solution to ensuring mobility for all isn't as simple as putting more wheels on the road: About one billion cars are already in use, and some estimates expect that number to rise to four billion by 2050. This issue is especially acute in urban areas in countries like China and India, where traffic congestion is already a major concern and car ownership is becoming more attainable.

How today's environment drives changes in automotive tech

We are approaching mobility in the 21st century with four megatrends in mind: explosive population growth in urban areas, an expanding middle class, air quality and public



"The existing infrastructure for motor vehicles simply cannot sustain the sheer number of vehicles expected to be on the road in the coming years. The future roadmap, therefore, has to include not only smarter cars but smarter roads and smarter cities."

— Erica Klampfl
Global Mobility Solutions Manager, Ford Motor Company



health concerns, and changing customer attitudes and priorities.

The first is urbanization or growing populations in urban environments. Today, there are 28 megacities or metropolitan areas with total populations of more than 10 million people worldwide. Fast-forward to 2030, and we expect to see at least 41 megacities worldwide. The existing infrastructure for motor vehicles simply cannot sustain the sheer number of vehicles expected to be on the road in the coming years. The future roadmap, therefore, has to include not only smarter cars but smarter roads and smarter cities.

At the same time many cities are growing, we see a second megatrend: the rapid growth of the global middle class. The Brookings Institute reports that the global middle class will double in size by 2030 – from 2 billion to 4 billion with Asia driving much of the growth. Many in this growing middle class will aspire to own a car – one of the traditional markers of economic progress for the last half-century – bringing a new set of challenges.

Think about the third megatrend: issues of air quality and related health risks from congestion. The World Health Organization and others have noted that urban air pollution is a serious social and public health issue.

The fourth megatrend would be changing consumer attitudes and priorities. Millennials, those born between the early '80s and early 2000s, are delaying marriage, buying homes and having children. As consumers, they behave differently from people of my generation and

older – especially when it comes to mobility. In the U.S., for instance: 47 percent of people today like using their smartphone to plan their transportation; 39 percent say they travel by bus, train or taxi so they can multi-task; And 34 percent say they would be interested in renting their car to strangers if they could.

These trends prescribe how we're approaching the future of urban mobility. It's an approach that recognizes that sometimes the solution may not be a private car but shared ownership models, ride sharing, or a multi-modal journey that requires a combination of different types of transportation. It also considers rural settings, where public and advanced transportation options are limited and basic services harder to attain.

Greater integration between the technologies in automobiles, mobile devices and infrastructure will change how we interact with the services that move us from point A to point B.

Mobile apps key harbingers of modern automobiles

A key component of our mobility strategy is getting people all over the world involved, and working with individuals, industry, academia and governments to find innovative solutions that meet the unique needs of different locations.

Take Chongqing, for example. The enormous Chinese municipality is home to almost 30 million people in a geographically diverse setting, with transportation options ranging from a funicular railway to trains and buses. As part of our Innovate Mobility Challenge Series, we challenged developers to find a way to optimize the available mobility options in Chongqing. The winner created a platform that enabled users to find the most efficient route to their destination using multiple modes of transportation, which can help reduce congestion and pollution.

In India, monsoon season can cripple cities for weeks at a time, with flooded roads and railways making mobility frustrating, time-intensive and dangerous. The Monsoon App Downpour challenge asked developers to come up with ways to leverage software and data – both historical and real-time – to provide a tool that can help people navigate through monsoon storms. The winning app, Mumbai Monsoon Helper, allows users to plan routes that avoid the most water-soaked areas using information gathered via crowd-sourcing. No one can stop the rain, but we can find ways to work around it.

These are just a few examples where people among us have come forward to address these mobility challenges. And there are many more issues like parking, increasing access to healthcare, and improving the delivery of services in rural and urban areas remaining to be addressed. □

Achieving 100% Literacy Doesn't Seem Impossible Anymore, with Cloud Based e-Learning Solutions.

The eLearning industry is expected to be \$107 billion by the end of 2015 and cloud computing has a significant impact in creating stable and scalable learning environments worldwide

- Harman Singh, Founder and CEO, WizIQ

Claimed to be the “hottest development in information technology,” cloud computing has changed the course of many industries, eLearning being one of them. The eLearning industry is expected to be \$107 billion by the end of 2015 worldwide. And cloud computing has taken major chunk of attention. Although sounding ambiguous at the face of it, cloud computing has a significant impact in creating stable and scalable learning environments.

Looking at the current cloud computing environment, Virtual machines or VMs, such as the provided by Amazon and Google, are the staple amongst cloud computing solution providers. They offer a range of benefits, such as security isolation, the ability to scale up or down, API access for provisioning, and guaranteed computational resources without any overhead for managing physical servers.

Big Data technologies such as Hadoop are also seeing a considerable increase in their usage and size because of their ability to aggregate valuable information that can be used through any publicly accessible API. Disaster recovery is an important area of interest, as previous problems such as testing the recovery systems, high installation cost of a backup system and potential disaster runtime scenarios can be addressed through the cloud.

Hybrid clouds spur eLearning growth

Hybrid clouds also see a growing preference for its services due successful integration of the benefits of public and private cloud systems; Amazon Web Services, or AWS, could potentially play a major part in managing the seamless transition between public and private clouds with their continuous innovations.



“Thanks to cloud based e-Learning, India can now hope to realize its long-standing dream of 100% literacy. It's changing the way teachers, trainers, administrators and learners interact and collaborate.”

— Harman Singh
Founder and CEO, WizIQ

These trends are extremely beneficial for eLearning companies where cost and responsiveness are at the heart of many purchasing decisions. Being cloud-based gives platforms a definitive edge – by eliminating the complexities of development and the prohibitive costs of setting up and managing server infrastructure.

By eliminating the need to purchase and install infrastructure, a public-cloud delivery model can lower the entry barrier by transforming the expenditure on capital into operational expenditure. eLearning platforms find this extremely helpful as the low running costs can help them achieve operational stability, scale up to handle more learners and offer services at affordable cost. Software updates or addition of new features are also taken care of behind-the-scenes, allowing educators to focus on what they know best.

These platforms handle large sets of data that grows exponentially as students communicate with instructors and with each other. During school days, exam-time, launch of a popular online course or any other event, the traffic on the website can grow abnormally. Cloud handles the demand reliably. Multiple availability zones also give the resiliency to remove geographic dependencies.

Benefits of cloud for educators

As the cloud is generally third-party and accessed

through the Internet, it also provides device and location independence to users, ensuring the data can be accessed regardless of the location and choice of device. Anytime, anywhere accessibility allows educators to transcend the geographical boundaries and provide seamless learning experience. Learners can stream video, attend classes, take tests, submit assignments, edit files through the cloud from anywhere work, home, library, etc., using various devices mobile, laptop and desktop computers.

Enhanced productivity, improved multi-tenancy and virtually unlimited scalability through dynamic provisioning of resources are some of the other benefits of using cloud computing.

Most cloud platforms have multiple servers at remote locations such as the US, Singapore, Sao Paulo and Ireland that ensure adequate distribution of the load demand and continuum in services and counter the disadvantages of network outage.

The cloud is indeed changing the way teachers, trainers, administrators and learners interact and collaborate - facilitates greater collaboration, improves access to quality education and increases organization's efficiency and effectiveness.

India can now hope to realize its long-standing dream of 100% literacy. □

**Before Investing Crores
on IT Purchase,
CIOs Spend ₹150 on PCQuest
and Visit pcquest.com
....Wise Decision**



For ad sales queries, contact:

Haminder Singh

Email: haminders@cybermedia.co.in



www.pcquest.com



<http://twitter.com/pcquest>



<http://facebook.com/pcquest>



<http://in.linkedin.com/pcquest>



<http://google.com/pcquest>



pcquest@cybermedia.co.in

WE'RE SOCIAL AS WELL:

5 Cloud Trends That'll Impact SMEs

With increasing mobile app adoption, the cloud is the logical backend for most SME startups to begin with. Here we discuss the 5 key cloud features that are likely to influence an SME choice for a cloud platform in the near future

- Nanya Srivastava, Business Analyst, Zoho



The total cloud market in India is expected to reach \$14.8 billion by 2020. Small and medium-sized businesses are driving this growth as they are the fastest adopters of the cloud. It not only reduces cost but also enables these companies to challenge and compete with larger, more established players the way Uber and Ola have done with cab companies. Now, if cab companies hope to survive in this new landscape, they have to offer a mobile app that makes hailing a taxi easy for commuters.

In the cover story of PC Quest August edition titled 'SMEs in India are Thinking Out Cloud', several entrepreneurs advised SMBs about what cloud software features to look for. Let's now look at the key cloud features that'll impact SMEs in the near future.

1. Scalability

You might start by using spreadsheets (albeit cloud-based ones) for storing contacts and handling sales and marketing figures. That may suffice when you have 10, 20, or even 100 contacts, but scaling on spreadsheets beyond that would hinder performance. What you need is a dedicated Customer Relationship Management (CRM) solution that not only keeps a database of all your leads and contacts, but also tracks sales and marketing efforts. With a scalable CRM, you won't have to look for a new solution once your customers increase from 100 to 1,000 to a lakh.

2. Flexibility

Many business solutions are built for enterprises and are therefore costly and unaffordable for SMBs. Also, these

"India is home to over 4,000 startups—the third highest in the world—with three to four new ones entering the market every day. Putting your company in the cloud automates many organisational processes, leaving you free to expand the business and take on the ever-growing competition."

— Nanya Srivastava
Business Analyst, Zoho



solutions come loaded with features that a small company would not need until they become medium-sized. Go for a solution that offers various plans and add-ons, so you can choose the one that best suits your needs. Because most SaaS vendors follow a subscription model, you can switch to a different plan at any given time without hassles.

3. Ease of Use

While leveraging technology is vital for you to stay and grow as a business, you don't have to be a software engineer to effectively use it. Go for a software solution that is intuitive, easy to use and easy to set up without extensive outside help. There are vendors that give you a business solution for a low cost but charge you heavily for setting it up. Before you purchase any solution, look for all the hidden costs and use the trial version.

4. Collaboration Efficiency

Collaboration is at the heart of any business. You might be working with teams in remote locations or different time zones on a particular project or document. With cloud software, you can collaborate in real time even when you're on the move. Seek out software that offers multiple communication channels—mail, chat, audio and video calls, web conference, etc. — for more efficient collaboration on a task.

For example, the ability to chat with various editors of a single document without switching to a different platform.

5. Integration Friendly

Finally, all these pieces of technology should work together as one instead of stand-alone silos. If you're using three different software solutions for accounting, email campaign and CRM, would you want to maintain and manage the same database in three different places?

Look for a solution that will tightly integrate these—from email campaign and CRM to accounting and HR solutions—to run an entire business. So you can make a list of customers from the CRM (even filter them based on location or other criteria) and send them an email announcing latest deals and product launches. You can then track the responses, such as how many customers opened the mail, through the CRM. An integrated solution requires you to sign in just once (SSO) and makes switching between different software easy. According to a recent Nasscom-Zinnov study, India is home to over 4,000 startups—the third highest in the world—with three to four new ones entering the market every day. Putting your company in the cloud automates many organisational processes, leaving you free to expand the business and take on the ever-growing competition. □

PCQUEST

India's leading IT Magazine, is available on iOS, Android Tablets and Smartphones!

Get the hottest tech news, trends, product reviews, comparisons, software sneak peeks and much more - on the go.

Subscribe to the digital issue of PCQuest on:

Zinio: <http://www.zinio/pcquest>

Magzter: <http://bit.ly/PCQuestMag>

Readwhere: <http://ld2.in/4ft>



Improve Internet Performance by Diversifying Your Cloud Portfolio

We look at the key trends impacting Cloud Services and discuss why teaming up with multiple cloud service providers is the way forward



- Martin Ryan, VP & MD-APAC, Dyn

Quality Internet Performance is essential for the health and well-being of your company. SMBs and Fortune 500 alike are allocating an ever increasing portion of their budgets toward strengthening their web assets, cloud-based services, content acceleration, and SaaS-based applications to keep their customers' Internet access fast, secure and uninterrupted.

But the question is: does all this investment really translate to better access to products and services for their end-users? For many top financial, retail and social platforms, the answer is a resounding "no."

Between the time a potential customer enters a domain and a page opens, a tremendous amount happens between the business connection and the end user. Errors can occur within the network, at the CDN or ISP level, or with a customer connection. A Website can be slow for many reasons as well, and most consumers—and companies, for that matter—have little insight into the 'how' and 'why' of their performance issues. Understanding these connections—monitoring, controlling and optimizing these connections—is the true test of internet performance. Here we list out the key trends likely to impact cloud services in the near future.

"Taking full advantage of multiple Cloud partnerships and spending more time examining internet performance will give you the flexibility and control to provide a consistent, quality experience for each and every customer."

— Martin Ryan
VP & MD-APAC, Dyn

Pipeline failures, security threats, and network latencies

Whether your company is in a fast-growth stage or already a mature market leader, all companies operating on the Internet are global companies. Understanding the flow of information and the level of connectivity of customers is no longer a “nice to have” feature of your network intelligence. It is crucial to have true insights into your network traffic.

Pipeline failures and outages can cause serious downtime for your site and your customers. With the rise of wireless access, it’s easy to think of the Internet as a ubiquitous resource. But the Internet is made up of physical pipelines that can affect the way your customers get to you. These pipes can fail (outages), be slow (high latency), or be of poor or inconsistent quality (packet loss). And, while your site may be up and running smoothly, your customer’s experience is still poor. There are on average 3,000 outages on the Internet around the world every day. Mitigating for these risks to Internet performance should always be on your radar.

Security threats are nothing new, but the risks they pose are increasing in severity. Customers believing they are connecting to your app can be hijacked (redirected) through another network to another site where their data can be compromised. While the majority of these hijacks are simply clerical errors, a small percentage are malicious and intended to harm your business. An example is the Man-in-the-Middle (MiTM) attack, where data can be collected along an Internet path before being connected to its destination without the customer or the business knowing until it’s too late. These hijacks happen so often you may not realize you’ve been affected.

Latencies aren’t always major infrastructure or data traffic issues. The device your customer is using to access the web plays a major role in the quality of their connection. Traditional desktop users connect via fiber, DSL, cable or even dial-up. Even those with the most sophisticated connection experience some slowdown because of the way data flows through the Internet. Mobile users can experience even higher latencies. In fact, according to an FCC research report, a 4G connection had a latency overhead of 600ms on new connections, a 3G connection had a latency of over 2s on new connections, and even existing open connections had a latency as high as 500ms.

While some of these issues may seem out of your control, the resources available to help mitigate them are steadily growing. Whether connectivity and performance issues occur at the customer connection point or within the greater network, your company is ultimately perceived as part of the issue and could lose

hard-won brand reputation and market share. Only 12 percent of Internet users worldwide are willing to wait for a website to load. Any interruption in service can be very bad for business.

Teaming up with multiple cloud service providers

Since serving customers online is table stakes, preventing issues that affect Internet Performance for companies in the cloud is the key to long term success. The best mitigation technique is to opt for not just one Cloud Service Provider (CSP), but several.

Using a variety of CSPs gives your company access to multiple cloud instances (locations), allowing you to meet your customers in their different markets and leverage local pathways to connect with them. Using an advanced DNS solution with geo-location, you can control which cloud instance serves which customers. This capability gives your business more flexibility and value, allowing you to scale with an always-on impression for customers. The ability to access different pathways also comes in handy when there are outages or slow load times—whether due to a traffic routing problem or a malicious attack. Working with multiple cloud providers will help you circumvent these issues by rerouting traffic as quickly as possible to ensure minimal interruption in your customer service.

Moreover, having multiple CSPs can help protect against problems before they even occur. Deploying apps and services to two (or more) cloud instances allows them to back each other up, using a load balancing or failover DNS architecture. This fail-safe, along with an ability to monitor the availability, reachability and performance of your selected cloud instances, can allow you to react quickly and change routing issues arise.

The Bottom Line

Forrester has noted that we are in the “Age of the Customer,” implying that businesses who survive—and thrive—are the ones that best understand, accommodate and serve the increasingly powerful and discerning customer. With massive amounts of business being done online, and the shift from face-to-face to Internet transactions, every business needs to consider Internet access from the customer’s perspective. The key is having insight into Web performance across the customer channel, both to and from your Web property.

The Internet is your competitive edge to use or lose. Taking full advantage of multiple Cloud partnerships and spending more time examining internet performance will give you the flexibility and control to provide a consistent, quality experience for each and every customer. □

'The Real Potential of Printing Beckons Us'

The growth of industrial print is happening in parallel to changing consumer demand and an increased desire for personalized products. We evaluate these and other such key trends that are going to impact the printing industry in the near future

- Minoru Usui, President, Seiko Epson

The printing industry has come a long way over the past few years, undergoing radical changes for the first time in a long time. These changes have introduced new possibilities across a wide range of industries; and this is set to continue. As a whole, the global printing industry is predicted to be worth \$980 billion by 2018, driven primarily by growth in packaging and labels.

Further, with 3D printing becoming an increasingly talked about technology and expected to become a \$16.2 billion industry by 2018, printing overall is beginning to outshine its original 'purpose' and is blossoming into a vehicle with overwhelming potential.

A significant driver of this evolution is inkjet technology. Inkjet technology is enabling a shift from analogue to digital, which is altering commercial print industry processes – those that have largely remained unaltered for many decades. This technology is shifting the production landscape, allowing for cheaper, faster and easier applications, along with shorter lead-times and print runs as well as greater flexibility and the opportunity for personalization.

According to INPRINT 2014 Show Report and Market Analysis, 39 per cent of businesses identify inkjet printing as the dominant form of single print technology for the future, followed by a combined use of technologies, 3D printing and screen printing.

While there are many inkjet technologies available, Micro Piezo is gaining popularity– a technology by which an electric current is applied to a ceramic element, ejecting ink from the print head. This technology offers greater

"There is a shift away from the traditional laser printer, with businesses increasingly looking to benefit from the improved efficiencies, cost reductions and cleaner processes that inkjet technology can offer; as well as an average 80 per cent reduction in power consumption."



1. Inkjet printing to remain dominant form of single print technology for the future
2. 3D printing expected to become a \$16.2 billion industry by 2018
3. According to IDC the inkjet will account for 25 per cent of the total business printer market by 2017

flexibility than other inkjet technologies (such as thermal printing technology which heats ink until it bubbles in order to eject it) as there are few limitations to the liquid that can be printed with or the materials that can be printed on.

And while 3D printing has immense potential but the the majority of consumers, office spaces and commercial applications remains, for the most part, in two dimensional printing innovations.

The industrial world

The growth of industrial print is happening in parallel to changing consumer demand and an increased desire for personalized products. This particular trend is creating the need for businesses to look for ways to be much more versatile within their production process. And there is a clear business case to do so. A recent Bain survey demonstrated that out of 1,000 online shoppers, 25-30 per cent would be interested in creating customized products and are in fact willing to pay up to 20 per cent more for them, an option that not only helps improve

brand loyalty but offers a competitive advantage. The packaging industry, one that's set to grow to reach sales of over 1 trillion US dollars by 2018, is similarly fostering new opportunities for greater creativity and innovation. Lower cost and shorter run label solutions offered by inkjet technology are allowing for more bespoke solutions for both commoditized, volume products and for artisan or cottage industry goods. Not only do these solutions allow for an element of individuality, they also help reduce costs and waste, as well as allow converters to respond more quickly to changing demands.

The textiles industry is also reacting to and meeting consumer demands for individualized and personalized goods. Thanks to developments in printing technology it has been made possible for some of the smaller players to grasp the opportunity too. Products such as our SureColour direct-to-garment and F-Series dye-sub printers are examples that are capable of producing one-off prints in a cost-effective way. One company that has seen particular success with this business model is UK-based YR Store, which has launched pop-up shops within Selfridges, Liberty and Topman in London, offering customers the chance to design their own personalized t-shirts. YR Store's Tim Williams believes "the future of fashion is in carefully curated live garment creation."

Within the wider textile industry, inkjet technology is aiding the resurgence of printed textiles.

Digital printing on fabric has steadily gained importance since the 2000s, reaching 420 million square metres (sqm) in 2013. Growing at an annual rate of 25 per cent this is predicted to be over one billion sqm by 2017. The textile industry is booming. In 2013 alone, it was worth \$1 trillion, with printed textiles making up 16 per cent of this. Inkjet technology is providing on-demand flexibility that traditional analogue print can't, as well as superior design flexibility, higher quality output and production flexibility. Because of this, digital inkjet print is rapidly being accepted by the market and growing at over 10 per cent year on year.

For the Como district of North Italy, famous all over the world for extremely high-quality printing on silk (including production for all the major high-fashion brands), the upgrade to digital printing has already been realized. Spurred on by the desire to stem the production-drain to the Far East and conscious of the need to focus on creativity, the Como district took the initiative to invest in cutting-edge digital printing technologies and now uses a large number of digital printing systems. Digital textile printing in the region grew from 2 per cent of total production in 2003 to 58 per cent by 2013 and is predicted to reach 81 per cent by 2017. This means that 8 sqm out of every 10 sqm – that's 80 per cent – of all fabrics will be digitally printed.

Enabling entrepreneurs and high-street businesses

In-house print capabilities used to only be a reality for more large-scale operations but today, new print technologies and solutions have enabled new business opportunities for the small- to medium-sized business too. To smaller businesses this means removing the need to outsource to highly skilled operators and being able to service growing consumer demands, such as the requirement for personalization. Smaller high street retailers such as digital photo labs and copy shops can now bring print equipment to the shop floor, offering an extended range of products cost effectively, with ease and on a wide range of media such as textiles, t-shirts, wall coverings and greeting cards.

At the same time, new players are able to enter the market at relatively low cost, offering bespoke solutions and on-demand print jobs across multiple media.

For designers and other creative service business owners who were previously limited by long lead times or unable to produce small print jobs due to cost implications, inkjet printing has enabled better cost efficiencies, increased innovation, enhanced speed from 'paper to print' and elevated creative possibilities. The risks associated with making a design mistake are dramatically reduced as the cost of printing is lower, allowing creative juices to flow more freely.

Inkjet technologies also enable printing to take place on a range of other applications such as ceramic, glass, wood, plastic and laminate.

Streamlining the office place

But it's not only within the commercial print industries where inkjet printing is changing the norm.

There is a shift away from the traditional laser printer, with businesses increasingly looking to benefit from the improved efficiencies, cost reductions and cleaner processes that inkjet technology can offer; as well as an average 80 per cent reduction in power consumption.

The RIPS (Replaceable Ink Pack System) products are gaining traction and can deliver up to 75,000 pages of uninterrupted print, without the need for a consumables change, and look to challenge the previously accepted centralized print model within the office by offering the convenience benefits of a localized printer fleet, but with the predictable costs of a centralized model.

They are also designed to address the impact of printer downtime and maintenance issues within the workplace. Right down to the individual and within home printing, new technologies are transforming the way we print. In line with the aforementioned RIPS technology, the EcoTank is a new printing model that combines affordability, convenience, quality and reliability, as well as up to two years' worth of printing without ever needing to replace an ink cartridge. □

Upcoming Trends in Printing Technology

Lower cost printers for consumers, digital printing to remain strong, 3D printing to fuel various sectors are some of the trends we see in printing for next year. Read on...



- Anuj Sharma

The Future of Offset vs Digital Printing

For the foreseeable future, offset and digital will not only co-exist, but will also complement each other- with offset taking the medium-to-longer jobs and digital performing on short-to-medium run lengths.

In terms of productivity and reliability digital printing is more cost effective over higher runs and can be produced quickly, thereby, reducing the turnaround time. The only industry where print demand is high worldwide is in packaging print, including printed labels. However, a long-term growth prospect for the print market is more limited. On the other hand, digital printing and variable data printing is growing ahead of market volume.

Impact of Digital Printing on the Industry

The switch to digital communications across media, advertising etc. has had a greater effect upon the printing industry worldwide. The impact is more profound in countries where these markets have reached the top in terms of developments.

Leveraging the concept of mobility with the rapid increase in smartphone usage is another key development expected. E-readers like the Kindle are also getting popular and are surely going to challenge print. The same can be seen in magazine publishing markets wherein advertising revenues have not recovered in most countries since a downturn in 2009, and are unlikely to return to that value in the future.

Internet advertising has brought down the market share of traditional mediums like newspapers and



1. Digital printing to capture larger market share
2. 3D printing starts saving lives
3. Erasable Print Technology printers will hit the market
4. Product innovation will be faster
5. More cost effective, high yield refillable ink tanks printers to be unveiled in 2016

magazines. Digital screens are now challenging outdoor media (billboards) and the same goes for in-store (PoP) advertising.

However, in areas like commercial print (stationery, financial & legal printing, etc.) publication print and advertising print will continue to grow.

Greater availability of MFPs could help make print a more attractive option, but in the end, if consumers, business and government switch to digital media at large

then it could be the case within 5-10 years that some of these printers will become dormant.

We have witnessed many transformations in the printing industry starting from offset then digital and now printing electronics and 3-D printing.

Digital Printing to Remain Strong in the Coming Years

Digital printing is growing leaps and bounds as it allows print suppliers to improve the levels of service they offer to customers, as well as creating new opportunities to make money. Increased personalization helps make print more targeted for the end users as the digital world continues to become more and more connected.

Speaking of future, the most dynamic areas that will use digital printing will be in the fields of packaging, cartons, rigid, flexibles, metal and corrugated and will include digital production methods. Future growth predictions for printed packaging are all good with no signs of replacements with electronic counterparts.

Demand For Cost-Effective Printing Will Continue To Grow

There is a growing demand among consumers for affordable yet high quality printing and this trend has been observed majorly among home segments and students. The demand for cost effective printers has started to increase in home segments, where they avoid running to nearby cyber cafes to get print outs. Therefore, many players in the industry are launching products for home buyers.

Expect To See Printers With Erasable Printing Technology

Toshiba recently demonstrated a prototype of their printing and copying system that automatically erases the contents printed on a piece of paper. Based on a technology that was originally intended for Pilot pens it works by depositing ink onto the page which is then rendered transparent through the use of a high-temperature heat plate located within the equipment. With this latest development, people would not need to discard incorrectly printed material. Instead, they can feed it back to the printer which would take care of the errors.

3D Printing To Fuel Various Sectors In Forthcoming Years

With the launch of 3D printing we know that printing is not merely about ink on paper anymore. 3D printers can produce three-dimensional objects using additive manufacturing process for developing prototypes, human cells and even organs, including the heart and liver.

5 Trends In 3D Printing

The ability for the masses to make almost any object not only fuels imagination but challenges modern consumerism and its supply chain. Here are five trends in three dimensional printing that will redefine the way we print.

3D Printing Starts Saving Lives: 3D-printed medical implants will improve the quality of living of many individuals. Because 3D printing allows products to be custom-matched to a particular body shape, it is being used today for making better titanium bone implants, prosthetic limbs and orthodontic devices. Experiments in printing soft tissue are underway, and may soon allow printed veins and arteries to be used in operations. Today's research into medical applications of 3D printing covers nano-medicine, pharmaceuticals and even printing of organs. Taken to the extreme, 3D printing could one day enable custom medicines and reduce if not eliminate the organ donor shortage.

Faster Product Innovation: From ultramodern architectures to automotive models rapid prototyping using 3D printers can reduce the time to turn a concept into a production-ready design. Although the concept of rapid prototyping is not new, however this gives designers more access to printers, allowing them to modify it, re-print, and so on. The result will be better products, designed faster.

Enhanced User Customization: Companies will use 3D printing technologies to give themselves a competitive edge by offering customization, allowing you to buy a product, customized to your exact specifications, which is 3D-printed and delivered to your doorstep. At first this may start from creating custom smartphone cases or ergonomic improvements to standard tools, but it will rapidly expand to new markets. Customization will also play a big role in healthcare devices such as 3D-printed hearing aids and artificial limbs.

New Products With Magical Properties Will Tease You: 3D printing combine's new materials and can control material as it is printed, right down to the molecules and atoms, thus new products created can have desirable and distinct properties.

Recycling Products And Creating New Things Becoming Industrial Strength: Ekocycle Cube, this innovative 3D printer recycles what you use, so you can easily remake better things. The printer processes PET plastic filament from discarded plastic bottles using Plastic Jet Printing technology. PJP is a solid-based prototyping method that extrudes material and builds model, layer by layer using additive process that rapidly renders complex geometries to the object being developed. The printer can be used in creating toys, consumer goods, carrying cases for electronic devices etc. □

Cyber Security: Predictions 2016

With large number of people being online or having an access to computers/tablets/connected devices cyber-crime has evolved and is more complex than ever

- Sidharth Shekhar

The Industrial revolution in the 17th century Britain introduced technological advancements in various fields but it also led to an enormous increase in crime as most criminals were poor, unskilled and uneducated people from overcrowded cities and rural villages. The movement of people from villages to cities put a lot of pressure on the already existing lower classes. In this digital age, communication has evolved from being real to virtual and the whole world is a global village connected through internet. This Digital Revolution has created a new forum for both terrorist activity and criminal behavior.

Critical infrastructures, emergency services, public utilities, banking sectors, food supplies, and transportation systems, have resulted in interconnectivity which is inconsistent with traditional security strategies. People have failed to deploy additional protection to safeguard their digital life. In fact, it may be argued that the Digital Revolution has hatched a favorable environment in which traditional criminals are adapting and new ones are emerging. India continues to be an attractive option for hackers.

Cybercrime in India has increased immensely in 2015, with 72 per cent companies accepting that they faced online attacks and 94 per cent respondents indicated that cybercrime is a major threat faced by organizations, according to KPMG Cybercrime security report 2015.

Also, India was one of the top target countries for Web Application Attacks as stated by Akamai Q2 2015 State of the Internet report.

Here are few security predictions for the year 2016.

Privacy concerns

Many of us receive promotional e-mails, calls or messages when we don't even ask for such information in the first place. This can be perceived as a lack of transparency on the part of the companies. What is done with our personal data is a question worth asking. Hackers are known to break into accounts and company databases to see our private information. The legal or permissible use of data collection and analytics on consumer behavior is likely far more common and wider impacting.

Cisco midyear Security Report reveals that global cyber governance is not prepared to handle the emerging



threat landscape or geopolitical challenges. The question of boundaries — how governments collect data about citizens and businesses and share among jurisdictions — is a significant hurdle.

With IoT and billions of connected devices, privacy concern as an argument has entered the mainstream debate. Furthermore, as big data grows, enterprises need a robust data privacy solution to help prevent breaches.

Attack on mobile devices and Point of sale (POS) to intensify

According to ESET survey, 40.8 per cent of Indian respondents engage in risky behaviors online making India the nation with the most risk taking tendencies when it comes to cybersecurity. In 2016, cybercriminals will ramp up attacks on mobile devices and point of sale (POS) systems. Hilton Worldwide recently suffered a breach when a malware attacked its point of sale (PoS) system thereby enabling attackers to steal credit card information.

We also have the third largest Internet user base in the world out of which more than 50 per cent are mobile-only internet users this brings us into a high risk zone where hackers will exploit key vulnerabilities to breach these devices.

“Increasing dependency on cloud computing and big data, are bound to introduce new vulnerabilities. According to the market study, SaaS (software as a service) providers have the highest number of vulnerabilities on an average, followed by the financial services industry.”

Hactivism will continue to grow

Hactivist group Anonymous has been involved with many high profile attacks on government, religious, and corporate websites through DDoS (Distributed denial-of-service) attack. Starting the year by condemning the attack on Charlie Hebdo and attacking ISIS related websites and Twitter accounts the group has warned of massive retaliation after the recent Paris attacks. We can surely expect that next year more and more of such attacks will be on the agenda of the hactivists. Access to real-time actionable threat intelligence will be the key for protection against these threats.

State sponsored cyber-attacks to increase

A large-scale global cyber spying operation was discovered in March 2009 by Infowar Monitor. Termed as GhostNet, this APT had infiltrated high-value political, economic and media locations in more than 100 countries including India.

According to Sergey Novikov, Deputy Director, Global Research & Analysis Team, Kaspersky Lab, “The line between financially motivated gangs and nation-sponsored cyber gangs is shrinking and the potential impact of these attacks will always be bigger than the numerical significance of such attacks.” The other major concern is that these cyber weapons can be reused and can resurface whenever the need arises. According to Kaspersky research these advanced attacks generally focus on:

- Factoring RSA-1024 keys
- Live modification of OS updates
- OS boot process orchestration
- Jailbreaking mobile OS
- HDD firmware infection

In a nutshell such attacks combine the most destructive elements like complete data exfiltration and disclosure, global DoS via destructive malicious code, public defacement and credential dumps.

Critical infrastructure to be targeted

Attacks against SCADA systems are on the rise, and tend to be political in nature as they target operational capabilities within power plants, factories, and refineries.

Greater focus on critical infrastructure protection (CIP)

is expected in 2016 as the weaknesses in industrial control systems (ICS) are detected by states to launch such attacks globally. In January 2015, a German federal agency revealed that an Advanced Persistent Threat (APT) attack physically damaged an unnamed iron plant. Further investigation revealed that the attackers had advanced know-how of not only conventional IT-security, but also precise technical knowledge of the industrial control systems and production processes used in the plant.

Attackers can easily access the tools to search the internet and locate sites on which ICS hardware runs openly. Organizations need to conduct a thorough analysis of their network device and service exposure to the internet.

Attack on Open source software inevitable

The software ecosystem is saturated with many OSS products. Many of these products, or libraries, such as OpenSSL, are even integrated into another piece of software thereby creating widespread vulnerabilities once the exploits are developed. Though many OSS projects consist of many files and thousands of lines of code, a professional hacker can simply download a copy of the program and review its source code to identify flaws through reverse-engineering.

Ransomware

According to security solutions firm Symantec, India witnessed as many as 60,000 ransomware attacks on computers last year, making it the third-most attacked nation in Asia. Recently, two well-known Indian companies faced ransomware attacks and were forced to pay the amount. India ranks ninth globally—along with developed countries such as the US, Japan, Germany and Italy—and on top in Asia Pacific in terms of ransomware attacks. The average ransom, demanded in India last year was USD 200 or around INR 13,000 according to the same report.

Till last year, most of the ransomware attacks happened on PCs, but the latest ITR 2015 report by Symantec reveals that hackers have diverted their attention towards Android thereby making the digital extortion process mass-scale.

Attack on communication channels

More than a third of users take no additional precautions when logging on to public Wi-Fi. Also, with the rise in the number of IoT based smart products, billions of devices are expected to be connected by 2020. Given the growth witnessed by the Indian companies in recent years and with increased Internet penetration, India is becoming more integrated to the global cyber village, thereby, making it more vulnerable to such attacks.

Hot products/developments to expect in 2016

- India has the world's second largest population, and a very small cyber security economy. According to a latest PwC report, India's cyber security market size is expected to cross \$1 billion USD by 2016.
- The network security sandbox market is set to grow immensely as advanced persistent threats (APTs) have made it mandatory to implement behavioral approach to detecting malware.
- 2014 was an important year for companies offering cyber insurance with a significant jump in both the number of companies offering cyber insurance and the number of firms buying them. Demand for that insurance rose by 21 per cent across all industries and the same can be expected next year.

Hot products released in 2015

Seagate Surveillance HDD – is the world's first 8TB surveillance hard drive disk (HDD), the largest drive of its kind for surveillance applications in the industry. Targeting surveillance system integrators, end users and system installers, the Seagate Surveillance HDD offers the highest capacity on the market.

ESET Mobile Security & Antivirus

With the strong detection rate, this security app has an easy-to-use interface. The app comes with a suite of anti-theft tools. This enables you to remotely locate and lock your smartphone or tablet, and you can prevent anyone from uninstalling apps by using password protection.

eScan – Mobile Anti-virus

eScan Mobile Anti-virus and Security for Android protects your device against evolving cyber threats, thus ensuring you its uninterrupted usage. It restricts unauthorized access of data, in case the device is lost or stolen. It allows remote locking, data wiping, SIM watching and even helps to locate phone through GPS finder. Also, the app comes with parental control featuring enabling you to block specific websites and applications.

360 Security

The latest 360 Security app has several new features to secure your device from threats. It has a good blend of usability and protection. It offers smooth performance and a host of extra features as well. It also optimizes your background apps, memory space, junk (cache) files and battery power, while keeping your device safe from virus and trojan. This also has the anti-theft solution that includes, Erase, Locate, Alarm and Lock can assist you with retrieving a lost device and protecting personal data. Scan installed apps and local APK files in real time and also monitor each installation process. □

Key Trends that'll Impact Online Security in 2016

To combat frauds, we have already seen key security advances in 2015, the work on which shall continue in 2016. Further, multi-factor authentication will play a significant role in the next year

- Atul Singh - Regional Director - India Subcontinent, Banking, Transport & Telecom Solutions, Gemalto

Recently, security has become a growing concern for both individuals and enterprises. Identity thefts, data breaches, malware and other forms of attacks have brought security in the spotlight. The growth in mobile and connected devices, internet adoption, machine to machine, mobile banking and adoption of technologies like cloud computing, have propelled the need for stronger security measures.

As we shift towards a more digitized world, new and sophisticated risks and threats from hackers and malicious users will continue to proliferate. In 2016, this will be no different and security will continue to gain importance. Here are three key trends we will see in the New Year:

Securing India's growing transactions space

India is experiencing an explosive growth in transactions. There are close to 600 million debit cards today, with over 170 million added in the past year.¹ Mobile wallets have also seen similar traction to debit cards, touching INR 125.99 billion between April-July 2015, according to a PwC report, commissioned by the Internet and Mobile Association of India (IAMAI) and the Payments Council of India (PCI).² The rapid growth in transactions corresponds with an equally consistent growth in frauds, highlighting the need to securing physical and digital transactions.

To combat frauds, we have already seen some security implementations in 2015 that will continue in 2016, this includes the Reserve Bank of India's (RBI) mandate that by January 31, 2016, all debit and credit cards should be EMV chip and pin based cards.

Furthermore, multi-factor authentication will play a significant role in the next year. This includes the use of one-time passwords, biometrics, especially the use of public key infrastructure (PKI) in payment system applications – another RBI suggestion to improve transaction security.

Of course, as frauds become more complex, newer technologies to counter them will also be implemented. This includes Dynamic Code Verification, which protects users against Card-Not-Present fraud by using a dynamic 3 digit code which changes every 15 minutes adding a layer of security and dramatically enhancing the security level of online transactions.

Securing the breach

Security breaches are growing rampantly. In India, in the last year alone, the number of cyber attacks doubled to 6,284, according to PwC.

By implementing a three-pronged approach – encrypting all sensitive data at rest and in transit, securely managing and storing all cryptographic keys, and controlling access and authentication of users – organizations can effectively mitigate the effects of a breach and protect their assets.

Securing IoT

By 2020, India plans on contributing five to six percent to the global IoT market estimated to be USD 300 billion. Initiatives such as the 100 Smart Cities and Digital India coupled with the growing number of connected and smart devices will pave the way for the uptake of IoT applications. This will bring about the exchange, collection and use of

billions of megabytes of data. According to a survey by Telecoms.com, only 10 percent of vendors think they are ready to keep IoT secure. Of course securing data will be imperative, therefore in 2016, we will see a shift towards securing the IoT ecosystem – from identities, networks, data, etc. The implementation of multiple layers of security such as encryption of data, tokenization or even PKI will be essential to ensure a security framework is in place to protect IoT. □



“Security breaches are growing rampantly. In India, in the last year alone, the number of cyberattacks doubled to 6,284.”

— Atul Singh

Regional Director - India Subcontinent, Banking, Transport & Telecom Solutions, Gemalto

11 Key Trends to Impact Storage in the Near Future

The storage market is quite a dynamic market wherein the prices are going southward and the storage capacities exactly opposite. But storage is gaining momentum in cloud arena, and SSDs are taking lead

The big storage solutions challenges of 2015 are how to make the data accessible on cloud seamlessly to users across the various devices without compromising the ever looming security threat. Talking about the cloud, Mr. Chris Chang, MD at ADATA Technology India Pvt Ltd says – there are two kinds of technologies available– one that is generally available for masses like Amazon Web services or Google Compute Engine that are very easy and simple to use even for novice. These have their inherent limitations like security of data, limitation of space, speed etc. Because of these limitations, they are not suitable for corporate use. To overcome this – there are specialists who provide robust and tailor made solutions for corporates 24x7. The industry today, understanding the importance of cloud storage, has been working out a mechanism to make cloud storage not only more easily available but also more cost effective.

Today the focus is slowly but steadily shifting towards flash-based products. Though a long way to go, but flash-based products like SSDs and the latest entrants , the M.2 SSDs, are surely going to be the game changer in the next couple of quarters at least in the professional series Desktop and laptop segments. With very low power



consumption, extremely fast data speeds, small foot print, availability in a wide range of configurations, these are surely going to be the segment to watch out in the near future.

Enterprise Storage: 6 Predictions for 2016

Predicting the future can be difficult, says Mr. Guruswamy Ganesh, VP - Corporate Engineering, SanDisk India, but with a little help from trends that emerged in 2015 as well as disruptive technologies that are now making their way to the forefront, it wasn't difficult to analyze the top trends companies should keep in mind for the coming year. Here is a list of things to look out for next year in the enterprise storage space.

“Security is a growing concern, not only across the country but globally. It is for this reason that CCTV and surveillance cameras are being deployed everywhere, right from homes to large enterprises. To support these, purpose-built surveillance drives are being deployed and their adoption is likely to increase in the coming year.”



1. The cost will drive adoption

Cost is ultimately what drives the speed of new technology adoptions. As the cost of flash declines, we believe flash adoption in the enterprise will continue to grow as a result. According to an APJ survey conducted by IDC, organizations in India emerged as strong early adopters of all-flash array (AFA) storage systems, with 21.3% of the organizations already having the systems in production. In many instances, it's not just long-term total cost of ownership (TCO) that makes flash more cost efficient – it's actual purchase price or total cost of acquisition (TCA) of equipment that's cheaper with SSDs. Having a better solution is just a bonus and the role of flash as primary storage should be firmly established.

2. Profitability will directly correlate to “Fast Data” processing

Organizations are not just contending with Big Data, and the demands of the exponential growth in capacity, but the need for “fast data”- data that is ready to be analyzed and mined as close to real time as possible. In

2016, infrastructure will have to respond as fast as the user, and businesses will rely on speed to make sure revenue is not lost. They will need to retain existing customers by delivering best-in-class experiences, and they will need the ability to capitalize on opportunities by utilizing collected data in the timeliest fashion before the opportunity is gone.

3. 3D NAND architecture will gain traction

3D technology will be the next wave for flash technology development. In 2016, we'll begin to see 3D flash starting to infuse flash-enabled devices and systems with high levels of performance and storage capacity. The end result? More storage inside laptops and smartphones, speed, and precision in Big Data processing, near real-time online experiences –and increased momentum toward the Internet of Things (IoT).

4. Application design will evolve

As flash continues to penetrate the enterprise, all-flash environments will lead to a massive boost in app response times and performance. But in order for that to happen first, applications will need to be better written for flash. We will see that shift take off next year. As the design process becomes

more streamlined, developers will be able to leverage the faster data processing capabilities of flash to create apps that are more powerful and offer a richer experience.

5. Networking will continue to get faster

The network is no longer the bottleneck and we're going to see more enterprises looking to upgrade their infrastructure. It is also now facilitating data movement to the right layer; as it's getting faster, the demand on the server will be greater.

6. Software Defined Storage (SDS) will go mainstream

If an enterprise hasn't already, 2016 may very well be the year they deploy SDS and data center orchestration layers like OpenStack, which seems to have hit critical mass. We're seeing a lot of converged systems relying on flash for performance being deployed in 2016 with flash performance compensating for the overhead of better management and abstraction. All of this sets the stage for even more server consolidation enabled by flash.

Bassam Tabbara, CTO at Quantum highlights a number of trends to watch across the market segments:

1. Object Storage: Ready for its Close-Up

Sensor based data – combined with new, sophisticated tools for analyzing buyer behavior – are driving Enterprise IT departments to retain increasing capacities of historical unstructured data to allow their users to assess the present in the context of the past. Businesses have reached the tipping point where traditional data storage methods can't support the resulting high capacity workloads. Object storage, with its online scalability and robustness, is the answer. Object storage has been in use for some time in major cloud service providers, but the technology is seeing traction with commercial enterprises now because it can scale to meet the capacity needs of massive data sets while keeping data at the ready. The unrelenting growth of unstructured data, together with lengthening RAID re-build times on high-capacity disks, is finally pushing enterprises into using object storage to extend online access to data in multi-petabyte, non-block data storage.

2. In Law Enforcement and Security, More Cameras + Higher Resolutions = Way More Data

Public safety has gone from a national security issue to the concern of every university, municipality, school and commercial enterprise. Cameras offer more sensors, wider panoramas, and higher resolution than ever before. And the resulting information is useful not just for today's security but for tomorrow's buyer analysis (and litigation protection). All these trends are driving the storage of more data, longer, for surveillance. As a result, security managers, who once installed standalone systems, are going to need to partner with Enterprise IT department to address digital storage as a part of their video surveillance architecture. And with the need for storage investment needing to be balanced against the budget for cameras and infrastructure, Enterprise IT must be ready to support them with an architecture that supports easy data access, but at the lowest cost of ownership. Tiered solutions with tape will increasingly be the answer.

"If over half of all enterprises are to adopt a hybrid cloud model by 2017 (as Gartner predicted last year) more organizations will be wrestling over where their data is stored."

3. 'Archive as a Service' Finds a Home for Compliance Data – In the Cloud

2015 was the year when cloud service providers – like Google and AWS – offered more (and less expensive) options for storing long term data in the cloud. A mass of vendors also offered gateways to help customers move their data off premise. But customers made their preferences known. They do not want piece part answers. Particularly for compliance data, they want fully outsourced solutions that simply remove the problem of archiving from the To Do list. 2016 will be the year these solutions arrive, with a major migration of customer compliance and "write once, hope to read never" data to the cloud.

4. When the Public Cloud is Not Enough

If over half of all enterprises are to adopt a hybrid cloud model by 2017 (as Gartner predicted last year) more organizations will be wrestling over where their data is stored. And, while public cloud is often touted as a more scalable and cost-effective storage solution than on-premise, the economics don't always make sense depending upon the data to be stored and performance needed. The media & entertainment industry has been dealing with this issue for years, as production houses often need to move massive video data sets quickly across disparate locations and recalling data from a public cloud would be far too expensive and time-consuming. In 2016, as more enterprise IT departments wrestle with massive data workloads generated from corporate video marketing, virtualization and the Internet of Things, they will also turn to on-prem cloud storage to get the job done quickly and on-budget.

5. Specialized storage for surveillance

Security is a growing concern, not only across the country but globally. It is for this reason that CCTV and surveillance cameras are being deployed everywhere, right from homes to large enterprises. To support these, purpose-built surveillance drives are being deployed and their adoption is likely to increase in the coming year says Khwaja Saifuddin, Senior Director - South Asia, Middle East and Africa, WD.

Expectations in the Year 2016

The year 2016 definitely looks to be the year of the comeback of flash with splash and that too in mid and large capacities. Beginning from the ubiquitous pen drives, hard drives (both external and internal), flash cards are going in the direction of personal cloud, with being Wi-Fi driven, making data accessibility easier for consumers. The trends in 2016 would be on storage gaining momentum in the cloud arena, SSDs taking lead, and more and more storage devices getting hooked on to Wi-Fi. □

Confused over
which Gadget to buy?
Get your answers at

PCQuest.com

Read Reviews about
the latest Smartphones,
Tablets, Printers &
MFPs and much more.

For ad sales queries, contact:

Harinder Singh

Email: harinders@cybermedia.co.in

We're Social as Well:



www.pcquest.com



<http://twitter.com/pcquest>



<http://facebook.com/pcquest>



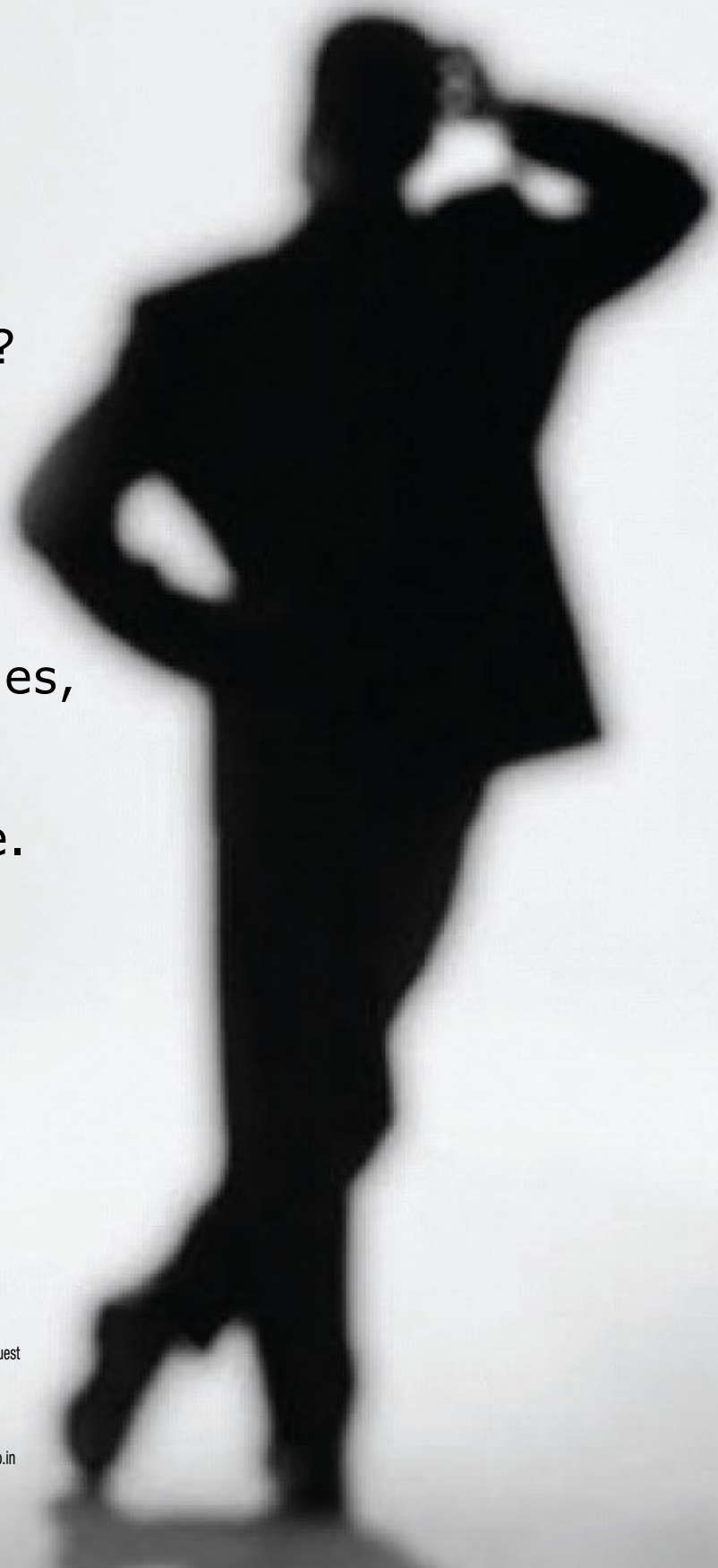
<http://linkd.in/pcquest>



<http://gplus.to/pcquest>



pcquest@cybermedia.co.in



SMEs Using Internet for Business Have 51 percent Higher Revenues: Snapdeal/KPMG Study

Massive expansion of the Internet has a direct correlation to the growth of e-commerce in our nation. With over 343 million Internet users in India, budding entrepreneurs have managed to commence their shops online rather than setup a physical one

– Nijhum Rudra

The market is observing a fresh trend where numerous SMEs are following the direction of E-commerce in order to build their business in the Indian market. They are utilizing the Internet not only as a marketing tool, but also to observe the demand for their products in the market. They are seeing e-commerce as a new-fangled tool to craft fresh models of business. Therefore, e-commerce organizations must ensure that they work in partnership and lessen the barriers to doing business for these SMEs so as to facilitate espousal of e-commerce.

Snapdeal, the popular e-commerce platform recently, along with KPMG conducted a comprehensive study to examine the macro-impact of e-commerce sector on growth of SMEs in India and identify remaining gaps in the eco system needed to be plugged to facilitate adoption of e-commerce by SMEs. Here are the key findings of the survey.

SME Scenario in India

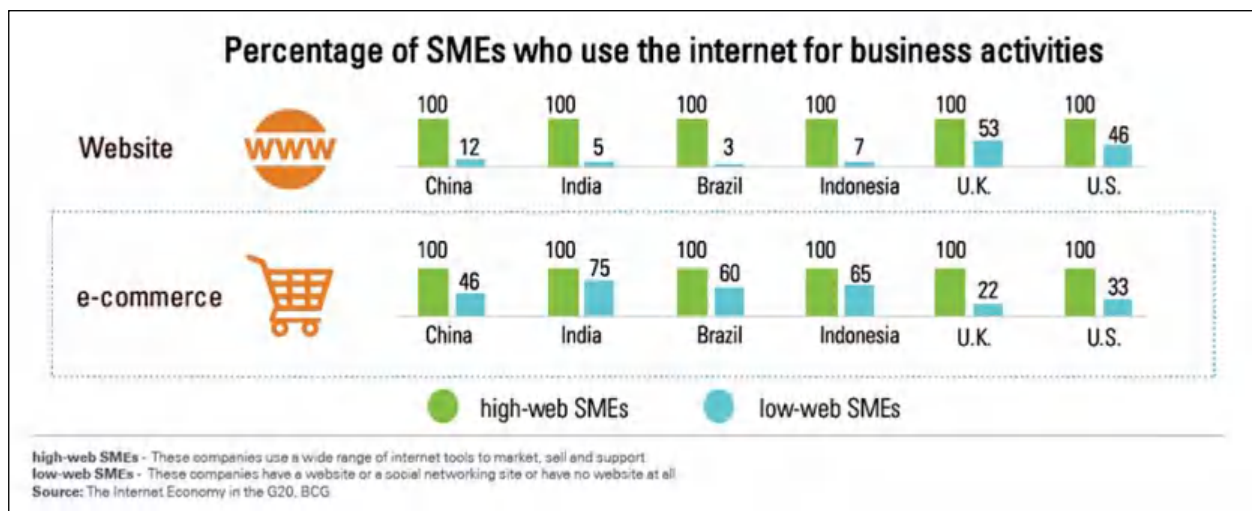
- 85 percent of the SMEs who adopted e-commerce believe that it is a cost effective medium to grow sales
- SMEs using internet for business saw 51 percent higher revenues and 49 percent more profit

- 73 percent of SMEs felt that ecommerce enables them to understand their markets better
- 46 percent SMEs reported increase in business through listings on online marketplaces
- E-commerce enabled SMEs reported 60 percent to 80 percent reduction in distribution; marketing and sales spend to get incremental business

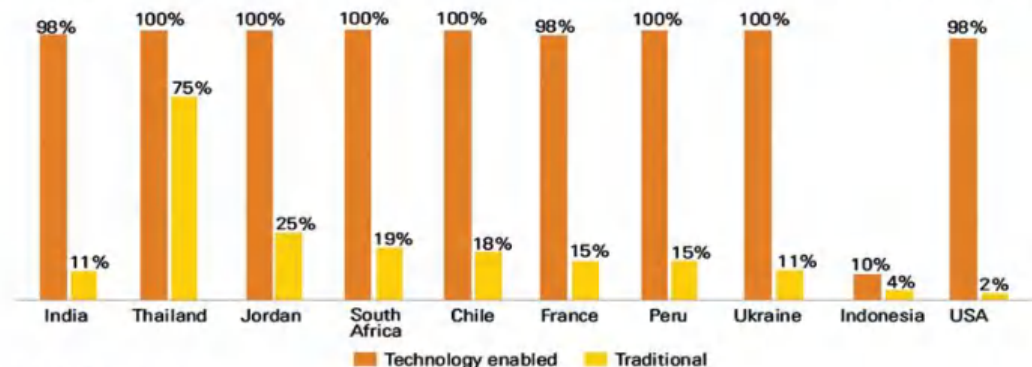
E-Commerce in India is on the Rise

Based on the growing number of Internet users and augmented by the adoption of smartphones and increased market awareness levels, it has been forecasted that the e-commerce market in India is likely to reach USD 80 Billion by 2020. By 2016, our country is expected to have the second largest set of internet users, leaving behind even the United States. There are about 173 million mobile internet users in India and this number is expected to escalate by more than 2.5 times to touch 457 million by 2019.

No doubt that the Indian e-commerce market is flourishing massively. However, its also facing huge hurdles like patchy Internet connectivity due to underdeveloped infrastructures, lack of awareness regarding positive aspects of e-commerce and more importantly, lack of trust among organizations to go online.



In India 98 per cent of technology enabled SMEs participate in the export economy



SME businesses have commenced operations as online sellers who have access to shoppers and customers throughout India. Internationally, cross-border e-commerce is a chief proceeds/revenue prospect, which most (Specific Number is not mentioned) SMEs are fervent to explore.

Indian Government is also undertaking several financial measurements to augment competitiveness of SMEs in the international market.

Key e-Commerce Trends in India

- USD 80 billion is the projected e-commerce market size by 2020
- SMBs are expected to contribute approximately 22 percent to the nation's GDP
- With an investment of around INR 3000, SMEs can enter into the e-commerce space
- SMEs using e-commerce record 60-80 percent reduction in marketing and distribution costs

Indian SMEs still sluggish in adopting E-Commerce

In other countries, namely China, Brazil, and Indonesia, on an average 100 percent of the high-web SMEs have a web-site and use the Internet for online advertising and transact using e-commerce. Indian SMEs however, are considered to be Low-web and only 5 percent have a website of their own, whilst approximately 50 percent in the similar type possess a website in the developed economies of the U.S. (46 percent) and UK (53 percent). High-web SMEs implies that these organizations are utilizing high speed internet and are well-developed in terms of IT, while low-web SMEs utilize internet to a very minimal level.

Another notable point is that while 100 percent of India's high-web SMEs have e-commerce presence, 75 percent of low-web SMEs have also adopted e-commerce. This clearly implies even those SMEs that have inadequate online access in developing markets are recognizing the prospect of embracing E-commerce or online presence.

As the e-commerce ecosystem develops and cross-border trade improves, the online export market shall also expand for SMEs that leverage internet technology for growth and sustenance.

98 percent of technology enabled SMEs in our country participate in the country's share of export revenues, while only 11 percent of the traditional SMEs export goods and services. Adoption of E-commerce helps Indian SMEs provide a better customer experience, improved geographic reach and accessibility, which helps escalate revenues and profit margins.

Overview of SME sector in India

- The Indian SME sector accounted for over 17 percent of the country's GDP in 2014, 45 percent of the industrial output and 40 percent of the total exports
- Indian SMEs add over 1.3 million jobs per year
- SMEs that use the internet extensively tend to export approximately twice as much by export value when compared to SMEs using the internet sparingly
- 43 percent of SMEs in India participate in online sales
- 27 percent of SMEs using the internet in India are engaged in e-commerce
- 69 percent of SMEs report an increase in customers due to the internet

Wrapping Up

From the past few years, the Indian economy showcases an imperative panorama for SMBs to gain double digit growth of business in the coming years. A lot of initiatives like 'Make in India', policy reforms, higher FDI numbers will proffer growth opportunities for SMEs in India. In order to attain these opportunities, SMEs have to alter and espouse the upcoming drifts in technology. SMB promoters have to carefully understand what these technology drifts are methods of adding value to their business model, operations, and to all the stakeholders of the business. □

Decoding Pig: The Data Toolkit of Hadoop

Part 4: BIG DATA TUTORIAL

Writing Map Reduce programs to Order and Join large datasets for analysis is a cumbersome process. Pig is a data analysis tool built on top of Hadoop to ease the pain and increase its popularity



- Narayana Murthy Pola, Sr. Project Manager, DST India

We have seen over the last few months how Hadoop ecosystem with its Map-Reduce programming model has grown into the most cost-effective distributive computing model processing large datasets. However, most of the analytic community is well-versed with SQL the de-facto language for data analysis. Writing Map-Reduce programs invites a steep learning curve if not, over-dependence on Map-reduce programmers. Also, Writing MR programs to Order and Join large datasets for analysis is a cumbersome process. This necessitated development of data analysis tools on top of Hadoop to increase its adaption.

Engineers at Yahoo and Facebook pioneered in developing such data analysis tools Pig and Hive to offset this problem and bring in Hadoop eco-system to the reach of larger analyst community.

Pig: Pig is a data flow language runs on top of Hadoop. It has two components **Pig Latin**, a data flow language and a run time environment to execute the

data flow instructions. Under the hood, Pig compiles the **Pig Latin** script into one or more MapReduce jobs to execute them.

Pig Latin provides standard data-processing operations, such as join, filter, group by, order by, union, etc. Pig can analyze the Pig Latin scripts and understands the dataflow requested by the user beforehand thus helping in early error detection and subsequent optimization.

Philosophy behind Pig

Pig is developed with the following theme in the background.

- **Pigs eat anything:** Pig can operate on any data structured, unstructured, relational, Key/value stores etc.
- **Pigs live anywhere:** Pig is not tied to Hadoop framework alone. Pig is supposed to be implementable on any Parallel framework
- **Pigs are domestic animals:** Pig can be easily controlled by users and supports user defined functions that can be written in Java or any scripting language that can be compiled down to Java.
- **Pigs can fly:** Pig processes data quickly.

Hadoop ecosystem developers share a unique sense of humor in naming the various tools they develop that convey no meaning of the function, however adds some fun element along with a theme which is evident above. The theme sets the tone of what can be expected from future versions of Pig.

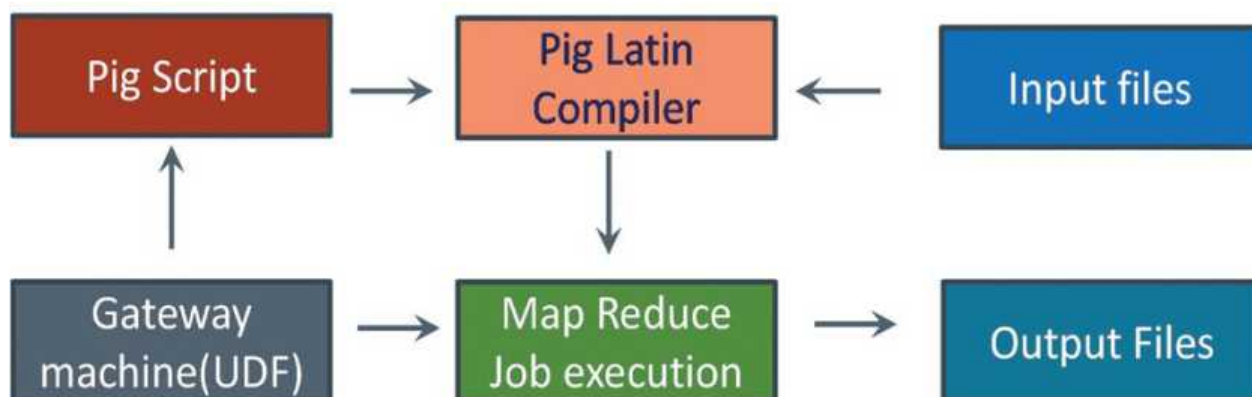
Areas of application

Pig being a data flow language allows users to describe how one or more inputs are read, joined, processed and stored thus finding application in 3 key areas.



Narayana Murthy Pola
Sr. Project Manager, DST-India

"Pig can analyze the Pig Latin scripts and understands the dataflow requested by the user beforehand thus helping in early error detection and subsequent optimization."



Schematic representation of a simple Pig job

- **Traditional ETL data pipelines:** Pig being data flow language finds right application in traditional ETL, For example extracting data from different sources including Streams like logs from Webservers etc, cleansing and enriching the data and loading the data in the required format to HDFS or any underlying Data store like HDFS.
- **Research on Raw Data:** Analysis on raw data used to be carried out by adhoc SQL queries or specialized tools which may submit SQLs internally. Schema is not generally known in raw data, Pig can rightly fit in such scenarios as it can operate when schema is not known, incomplete or inconsistent. Pig's data flow paradigm is preferred by analysts rather than the declarative paradigms of SQL. An example of such a use case is an internet search engine (like Yahoo, etc) engineers who wish to analyze the petabytes of data where the data doesn't conform to any schema.
- **Iterative Processing:** This is one use case where Pig finds its application. In this case Generally there is one large dataset that is maintained. Processing involves continuous addition of incremental data loads that changes the state of the dataset. A classic example of such a scenario is an online news portal that keeps all the news stories as a huge graph with each news story as a node. There will be links between the stories as they may refer same events. Whenever a news story is added which happens periodically (for example every few minutes), a new item is needed to be added to the graph, find related stories and create links. There is the constant inflow of changes and the need for incremental processing. Pig Latin can do all the standard database operations in an incremental way making it the right area for Pig. Likewise, Popular social networking site like LinkedIn is a classic use case for this scenario.

How Pig Works

Pig runs on Hadoop. Pig is written in Java and is portable across operating systems. It need not be installed on Hadoop cluster. It runs on the machine from which the user launches Hadoop job, i.e. it can be run from one's own laptop. However as a best practice cluster owners can set up one or more machines which are not part of the cluster to install Pig and submit jobs. This helps in securing the cluster and ease of updating Pig and other tools to their next versions.

Pig can run in two modes Local mode and on Hadoop cluster. The only thing Pig needs to know to run on Hadoop cluster is the location of cluster's NameNode and JobTracker. Local mode is useful for prototyping and debugging Pig Latin scripts.

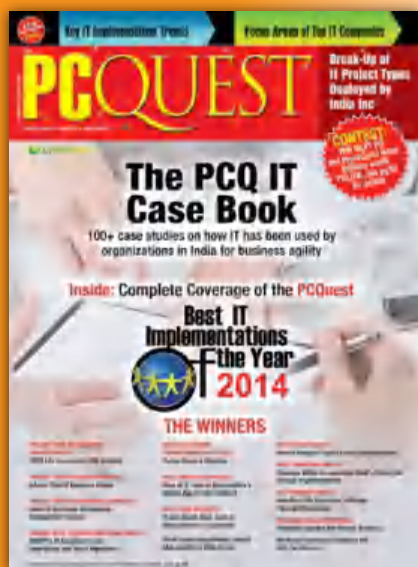
Pig provides a shell for interactive sessions with users and is called Grunt. It enables users to enter Pig Latin interactively and interact with HDFS. Grunt provides command-line history and editing, as well as Tab completion. One of the main uses of Grunt is to quick sampling and prototyping new Pig Latin scripts. Grunt can also be used to control Pig and MapReduce jobs.

Pig submits MapReduce jobs in the background. Thus, Latency should be expected and is not suitable for Online or Analytical type of processing. It is best suited for dataflow operations as discussed above. However, Pig is extensible – users can create custom functions in Python or in Java. Likewise, Pig is very much integrated with Hadoop ecosystem and can share metadata information between Hive, MapReduce and other tools integrated with Hadoop. Pig is patronized by commercial distribution vendors like Hortonworks and projects to reduce the latency are underway. Pig also enjoys many committers. It is not a surprise if Pig can become the defacto ETL standard in Hadoop ecosystem. □

To Know about Latest

- Tech Products
- Gadgets
- Product Reviews

Read PCQuest!



Book Your Subscription NOW!

4 EASY WAYS TO SUBSCRIBE

Online: subscriptions.cybermedia.co.in/pcquest/, Email: rsepcquest@cybermedia.co.in

Tel: 0124-482-2222 Fax: 0124-238-0694

Yes!

I want to subscribe to PCQuest



	Period	Issues	Price for New Subs.	Price for Renewal	Your Benefit Zone
<input type="checkbox"/>	1 year	12	Rs. 1800	Rs. 1620	Get 1 issue free save 10% on renewals
<input type="checkbox"/>	2 years	24	Rs. 3600	Rs. 3240	Get 2 issue free save 10% on renewals
<input type="checkbox"/>	3 years	36	Rs. 5400	Rs. 4860	Get 3 issue free save 10% on renewals

Please tick your subscription choice above, fill the form below in CAPITAL LETTERS and mail/fax it to us.

☐ I want to avail premium service of receiving my subscription copy by courier. Tick which ever is applicable.

☐ ₹300/- 1 year, ☐ ₹575/- 2 years, ☐ ₹850/- 3 years

Name: Mr/Ms _____ Date of Birth:

Organisation: _____ Designation: _____

Delivery Address: _____

City: _____ State: _____ Postal Code:

Mob [+]: Tel: Email [+]: _____

☐ I am paying ₹ by DD/Cheque No.: Dated:

Payable at (specify bank and city) _____

OR

☐ Please Remit for ₹ Through RTGS/NEFT to our A/C details given below:

Bank Name: HSBC Bank A/c No. 054-342050-001, Branch & IFS Code: GURGAON, HSBC0110005

[+] Essential fields

Signature _____ Date: Subscription No. (for renewal) _____

Order can be faxed to:

0124-2380694 or mail the form with payment (cheque/DD) to:

Sarita Shridhar, Cyber Media (India) Ltd, Cyber House, B-35, Sector 32, Gurgaon - 122001 Tel: 0124 - 4822222.

Terms & Conditions:

• This special offer is valid for a limited period. • Rates and offer valid only in India. • Please allow 4-6 weeks for delivery of your first copy of the magazine by post & 8-10 weeks for delivery of your assured free gift. • Send crossed Cheques in favour of Cyber Media (India) Ltd. • Please write your name and address on the reverse side of the cheque or DD. All outstation cheques should be payable at par. • Cyber Media (India) Ltd. will not be responsible for postal delays, transit losses or mutilation of subscription form. • Cyber Media (India) Ltd. reserves the right to terminate or extend this offer or any part thereof. The decision to accept or reject any or all forms received is at the absolute discretion of the publishing company without assigning any reason. • Please include pin code for prompt delivery of your copy. • In case payment is through credit card, date of birth must be mentioned. • Request for cancellation of subscription will not be entertained once the free gift has been dispatched. • All disputes shall be subjected to Delhi jurisdiction only.

17 FREE STORAGE AND CLOUD TOOLS FOR BACKUP AND SYNCHRONIZATION

- FreeNAS:** The FreeNAS website touts itself as "the most potent and rock-solid open source NAS software" You can use it to turn standard hardware into a BSD-based NAS device, or you can purchase supported, pre-configured TrueNAS appliances based on the same software. Operating System: FreeBSD
- NAS4Free:** NAS4Free makes it easy to create your own BSD-based storage solution from standard hardware. It promises a low-cost, powerful network storage appliance that users can customize to their own needs. Operating System: FreeBSD
- Turnkey Linux:** Turnkey offers more than 100 different software appliances based on open source software. Among them is a file server that offers simple network attached storage. Operating System: Linux
- Openfiler:** Openfiler aims to combine NAS features (NFS, CIFS and HTTP) with SAN features (iSCSI, FC) in a very easy-to-setup storage appliance. It's been downloaded more than a million times, and its users include Motorola, Pratt & Whitney, BillMelater and the London Metropolitan Police. Paid support is available. Operating System: Linux
- Open Media Vault:** This NAS solution boasts really easy-to-use storage management, fast setup, uninterruptible power supply support and statistics reporting. It's based on Debian Linux and offers a number of plug-ins to extend its capabilities. Operating System: Linux
- FTPbox:** This app allows users to set up cloud-based storage services on their own servers. It supports FTP, SFTP or FTPS file syncing. Operating System: Windows
- Pydio:** Formerly known as AjaXplorer, this app helps enterprises set a file-sharing service on their own servers. It's very easy to install and offers an attractive, intuitive interface. Operating System: Windows, Linux (Android and iOS clients available)
- SparkleShare:** Another self-hosted cloud storage solution, SparkleShare is a good storage option for files that change often and are accessed by a lot of people. (It's not as good for complete backups.) Because it was built for developers, it also includes Git. Operating System: Windows, Linux, OS X.
- Syncany:** Syncany is similar to Dropbox, but you can use it with your own server or one of the popular public cloud services like Amazon, Google or Rackspace. It encrypts files locally, adding security for sensitive files. Operating System: Windows, Linux, OS X
- Bacula:** Another enterprise-grade open source back solution, Bacula offers a number of advanced features for backup and recovery, as well as a fairly easy-to-use interface. Commercial support, training and services are available through Bacula Systems. Operating System: Windows, Linux, OS X
- Clonezilla:** Conceived as a replacement for True Image or Norton Ghost, Clonezilla is a disk imaging application that can do system deployments, as well as bare metal backup and recovery. Operating System: Linux
- FOG:** Another imaging and cloning solution, FOG makes it easy for administrators to backup networks of all sizes. It also includes features like virus scanning, memory testing, disk wiping, testdisk, and file recovery. Operating System: Linux, Windows.
- Grsync:** Grsync provides a graphical interface for rsync, a popular command line synchronization and backup tool. It's useful for backup, mirroring, replication of partitions, etc. Operating System: Linux, Windows, OS X.
- LuckyBackup:** Award-winning LuckyBackup offers simple, fast backup. Note that while it is available in a Windows version, it was first developed for Linux, and the Windows version is not as stable. Operating System: Linux, Windows
- Redo:** Downloaded more than 750,000 times, Redo claims to be "so simple that anyone can use it." In addition to backups, it can do bare metal restores in as little as ten minutes. Operating Systems: Windows, Linux
- Synkron:** As you might guess from the name, this is a data synchronization tool. Key features include blacklisting, analysis and restore. Operating System: Windows, Linux, OS X
- UrBackup:** A client-server system, UrBackup does both file and image backups. It requires very little configuration and does incremental backups while you work without slowing your system. Operating System: Windows, Linux

8 free bug tracking software

1. Bugzilla, 2. Mantis, 3. JTrac, 4. Redmine, 5. Request Tracker, 6. Fossil, 7. The Bug Genie, 8. Weblissues

7 free developer tools for IoT

1. Arduino, 2. RIOT, 3. Contiki, 4. Spark, 5. Nimbits, 6. OpenRemote, 7. SiteWhere

5 FREE AND FULL GAMES

- THE PATH OF HERCULES:** Follow the path of a great hero of the past, Hercules, as you embark on a new exciting journey.
- MAGNETIC ADVENTURE:** Using a small magnet, solve 50 physics-based puzzles that will stretch your gray matter in ways you never imagined.
- GOODGAME EMPIRE:** Empire is unbelievably great strategy game. Build your own castle, create a powerful army, fight in epic player versus player battles and become a ruler of the great empire!
- MYSTERYVILLE 2:** Once again there's something strange happening in this charming little town.
- AQUASCAPES:** Explore the incredible seek-and-find underwater world of Aquascapes! Take care of your finned friends and play with them, watching as they interact with each other and you. Engage in unique hidden object gameplay as you earn money to customize your tank and make your pets happy.



Linux Distro

- 1. ClearOS Community:** It is an open source operating system based on the CentOS Linux server distribution and designed for small organizations and distributed environments. It provides users with a very powerful cloud-connected server, gateway and network OS.

- 2. Univention:** "The Univention App Center integrates the container technology Docker. With Docker, it is possible to run Apps separately and encapsulated from each other. This increases the security of the UCS domain and reduces the dependencies of the Apps on other software libraries. The integration of Docker is transparent to the users. The App Center will automatically perform the start-up and configuration of the Docker containers. The classification is based on data such as the installation base of the Apps or the maintenance behaviour of the app providers.

Setback for Maharashtra SMEs as Traditional Manufacturing Hubs Fade Away

We spoke to Bipin Shah, president of Thane Belapur Industries Association, to understand the various impediments and imperative hurdles that led to the demise of traditional manufacturing hubs in Maharashtra

– Nijhum Rudra

The online industry has achieved massive penetration in India over the past few years. There is an easy availability of different variety of goods. E-commerce giants like Flipkart, Amazon and Snapdeal have evolved to a higher extent but the biggest drawback is buying medicine online. Online medicine is the need of the hour as various foreign medicines are not available in the shops.

Bipin Shah, President of TBIA, explained the overall picture in detail and gave his opinion about the business priorities of the SMEs.

The Challenges

One of the challenges faced by the pharmaceutical industry is the proliferation of online medicine stores. Most of the physical stores are closed after 9pm, so people in rural areas are deprived of having proper medicine even if they can afford it. As per Drug and Cosmetics Act, online medicine cannot be permitted because before delivering the medicine the supplier needs to have original prescription. In India, people are not still aware of this. Many rural and semi-urban shops complain that they do not have the capability to have ample software to store all the necessary documents and prescription. They want the government to provide loans to procure computers. If that is achieved, then online medicine can be managed smoothly.

Dealing with the Hurdles

In order to tackle these challenges, we are waiting for the drug controller, Government of India to amend the Drug and Cosmetic Act so that the email prescription is permitted instead of original prescription. The point is that

even if the shops receive original prescription through email they cannot give medicine on the basis of a scanned copy. Moreover, government must ensure that every rural and semi-urban medical shop must have computers and sufficient software to store all the details of the patients.

Policies Rolled Out by Government and Possible Expectation

As of now there are no special benefits provided to SME industries although we generate highest employment and serve ancillary industry to large companies. We expect the following from the government.

- Concessional rate of interest for fix capital and working capital
- Subsidy for the first 3 years
- Sales-tax deferral and exemption from income tax for the first 5 years

IT Usages and the Overall Impact

IT in pharmaceutical sector is substantial; however there's always a possibility to increase its integration. Our industry members comprise of SME and large industries. We also have several IT parks in our area. The level of IT usage is quite high. The pharmacy industry serves Tier 1, Tier 2, Tier 3 citizen townships and development of IT facility in Tier 2 and Tier 3 is very less due to which we are not able to pass on the benefits to the patients.

We have integrated our factory, our head office, and our R&D lab by using IT. It is also useful for MIS systems. We expect IT vendors to be cost effective so that the industry implementation can be achieved at a faster rate.

Key Activities of the Association

Thane-Belapur Industry Association has about 700 members, out of which 550 members are from SME's. It is a premier association in Navi Mumbai and Thane-Belapur industrial belt. The main activities of the association are to help members solve their problems with government and semi-government departments. Even we train various SME belts with our IT teams and other employees for their overall benefits. We teach them about their profit margins, business priorities and also about the modern equipments that can help them craft better products in lesser time. □



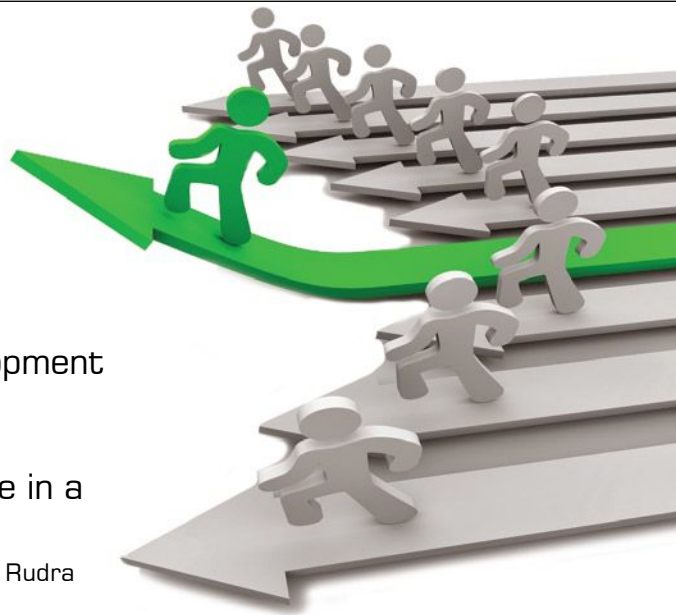
Bipin Shah
President, Thane Belapur
Industries Association

"Many rural and semi-urban shops complain that they do not have the capability to have ample software to store all the necessary documents and prescription. They want the government to provide loans to procure computers. If that is achieved, then online medicine can be managed smoothly."

We're launching an e-Shop to help Artisans sell their products online

We spoke to Shivaji R. Daund (IAS), MD, Maharashtra Small Scale Industries Development Corporation to understand the numerous challenges faced by their organisation in delivering quality products at the right price in a fiercely competitive market

– Nijhum Rudra



MSSIDC was formed to provide adequate raw materials and extend marketing assistance to SMBs. The primary aim is to assist the small scale industries for their development and expansion in a superior way.

As of now, the corporation's paid up capital is Rs 9.13 crores and the authorized share capital is Rs 10 crores. MSSIDC board is planning to increase its share capital to Rs. 20 crores.

The challenges faced

As an entrepreneur, the major challenges faced pertain to the delivery of quality products in this cut throat competitive market. However, in handicrafts market imparting skills to the artisans and improving their livelihood is another major challenge.

'We are undertaking skill development programs for SMEs and forming clusters for increasing their livelihood. We have undertaken a Skill development program as a CSR (Corporate Social Responsibility) activity where we have imparted vocational skills to 160 students, which also includes women entrepreneurs,' said Daund.



Shivaji R. Daund (IAS)
MD, Maharashtra SSIDC

"We have undertaken a Skill development program as a CSR (Corporate Social Responsibility) activity where we have imparted vocational skills to 160 students, which also includes women entrepreneurs."

The role of Ministry of MSMEs in developing SMEs

The guidelines issued on cluster (MSE CDP guidelines) from Central and state governments is helping and providing assistance to improve the quality of the products and increasing their standard of living. The new purchase policy has given a reservation of 30% to SSI units. A total of 241 reserved items will be purchased through SSI via tendering process. Further, the policies framed by the government are in the interest of the SSIs units and artisans.

The role and usage of IT

We are surrounded by IT industry from cell phones to e-shops. Every individual is in touch with IT. Our entire team is in the process to implement a paperless office. Challengers are the opportunities, where learning is a continuous process. With regards to implementing IT, we are going to launch our e-shopping portal "Marhati – e shop". Our e-shop will provide the SSI units and handicraft artisans to showcase and sell their products online. As you are now aware we are going to implement a paperless office and are going to launch e-shop portal, MSSIDC and our beneficiaries will benefit from IT. The report, accounts, analysis and status will be a click away.

The roadmap for the future

'We want to onboard all the crafts and SSI products in our portal and want artisans and SSIs to handle their profiles individually,' added Daund. We want to increase awareness of artisans in IT and its allied products and make them understand how they can integrate IT in their businesses. Most importantly, we want to increase awareness of crafts and SSI products, which shall provide a source of livelihood to our beneficiaries,' he concluded. □

Pune SMEs are Inclined to Utilize Technology But Lack the Know-How

In an exclusive interview, Dr. Ananat Sardeshmukh, Director General, MCCIA, opines about why SMEs in Pune are keen to use IT and how it has altered the Indian market

– Nijhum Rudra

“Over the past few years, our nation has been progressing at a healthy rate of around 8-9 percent. The market was a bit sluggish during the period of downturn, but SMEs involvement in the Indian market is immense,” begins Dr. Sardeshmukh. In the preceding two years Pune witnessed a growth rate of 33 percent, while expecting 40 percent income growth in the next couple of years. The total employment in SMEs amounts to approximately 4.17 lacs. The IT section is observing an augmentation of 48 percent and is foreseeing a standard income growth of 52 percent in the coming two years. The growth of engineering and mechanical units are also quite impressive: while 20 percent of the companies have shown more than 40 percent revenue growth in the last two to three years, 32 percent companies expect more than 40 percent revenue growth in the next couple of years.

The business challenges

In spite of these developments and expansions, SMEs are facing grave hurdles like the pressure of worldwide slowdown. There has been a reduction in demand and support from creditors that has cramped the export market. “Unlike large companies, these units have resource, capital & skill constraints and cost inefficiencies. Therefore in times like this it becomes more difficult to invest in latest technologies or plan for expansion,” says Dr. Sardeshmukh.

The major challenges are the plethora of government approvals and sanctions required to start a unit. It also

takes considerable time for the entrepreneur to comply with all the multiple statutes. Availability of credit to a totally new, first generation entrepreneur becomes a problem.

Tackling the hurdles

MCCIA have been representing these problems to the government. By constant follow ups they try to engage with the concerned government department and try to get some solution on these problems. MCCIA also supports new entrepreneurs and helps them resolve their issues.

Key activities of the association

MCCIA represents industry trade and business on the different government platforms. They indulge in a dialogue with the government and its departments to seek solutions to the problems faced by the industry. “We take up proactively certain issues which need the attention of the government and which would help the industry. Our organization helps the members to network with different companies from various countries, while organizing interactive sessions for our members with the heads of different government departments,” says Dr. Sardeshmukh. “We do advocacy on behalf of the industry and organize conferences, seminars, and training programs on different subjects which are of interest to the industry,” he adds.

Building business through Ministry of MSMEs

For the past few years, the ministry of MSMEs has come up with many schemes and some of them are good. They are trying to resolve the problems of the MSME segment and must ensure that the necessary reforms are carried out immediately to guarantee the success of Make in India, where MSMEs can play a vital role. The government should come out with reforms including labor reforms at the earliest.

Role of IT and its awareness

The IT usage is fairly good in MCCIA and there is huge level of awareness for it, well above 70 percent. The organization is having a very active IT committee that organizes many imperative events on the application of IT. “In the future we want to move for more enhanced IT enabled services,” concludes Dr. Sardeshmukh. □



Dr. Ananat Sardeshmukh
Director General, MCCIA

“The Ministry of MSMEs must ensure that the necessary reforms are carried out immediately to guarantee the success of Make in India.”

UTM

Cyberoam CR10iNG

The easy to setup UTM comes at an affordable price with several new security features

— Ashok Pandey

Cyberoam CR10iNG security appliance is made keeping the business security demands in mind as well as the growing risk from several threats. Additionally, this provides wired and wireless network functionality as well as anti-spam, content filtering, anti-virus, intrusion detection and prevention, anti-spyware, SSL VPN services along with a powerful firewall.

Space saving design and easy to setup web console:

The appliance is equipped with a 1.8 GHz Atom CPU, 1 GB of system memory, a 4 GB compact flash card for the OS and a trio of Gigabit ports. When it comes to security services, you can choose between the Security Value Subscription (SVS) or the Total Value Subscription (TVS).

This has the capability to function in two modes – Gateway or Bridge. Depending on the network requirement, this can be setup easily using the web-based user-friendly interface. The web console lets us set up the network ports and provides the option of a passive monitoring mode or applying a choice of predefined security policies.

This comes with Cyberoam's identity-based security. Using this added security layer, admin can create a permanent profile for the user which makes all future authentication possible based on identity-based decision parameters such as username, IP address, MAC address and session ID.

Securing the network: in our test setup we used the gateway mode. We created a network utilizing just two ports (LAN and WAN). Then we registered the product using the key so that it can be synchronized with the Cyberoam servers and updated with firmware as well as latest signatures of viruses, spyware, spam, etc. The appliance works as a firewall as well as can protect websites and web-based applications from Application Layer (Layer 7) attacks like SQL injection, cross-site scripting (XSS), URL parameter tampering, etc. This can work with Ipv6-based URLs. Its IPS provides protection against DoS attacks, backdoor activity, blended threats, etc.

To test anti-virus capabilities of this device, we created a Windows machine with Apache web server running on it and then dumped different types of viruses (macros, zipped files, etc). We tried to download these viruses from a machine behind CR10iNG. For effective scanning and blocking, click on 'ANTI VIRUS>HTTP' (we used http protocol for downloading viruses) and change the scan mode to batch mode. Now while we tried to download viruses we found out that over 85% of those viruses were blocked.

To test DoS capabilities, we used a Win 7 and Kali 1.1.0 machines, and setup a server. To flood the server, we used LOIC tool as well as used Kali flood commands. First we began with LOIC (DOS attacking tool) and ping our local server. The appliance protected the server and tool was unable to attack on our server. Similarly using the Kali flood commands we tried to attack on the server, and again it protected the server.

To test anti-spam capabilities, we created a POP3 server using Microsoft Windows Server 2003, and created a test domain with a test user, and dumped spam mail in the mailbox (on the WAN side). Next, we downloaded these emails from a mail client on the LAN side. But before doing this, we created a few rules by clicking



SCORE

PRICE: **9/10**

PERFORMANCE: **9/10**

FEATURES: **9/10**

Overall: 9/10

Total Value Subscription:
₹20,000/Year

KEY SPECS: 2 USB and 4 ethernet ports, Multiple Link Management, VPN, 3G/4G/WiMAX Connectivity, IPv6 Ready, 1.8 GHz Atom CPU, 1 GB of system memory, a 4 GB CompactFlash card

PROS: Easy to setup, user-friendly web console, numerous preconfigured policies, effective protection

CONS: None

WRITE TO: Cyberoam

Tel: 1-800-301-00013, E-mail: sales@cyberoam.com

on 'ANTI SPAM>Spam Rules'. Once we downloaded these emails we found that more than 95% of them were scanned and tagged by CR10iNG.

Besides checking these capabilities, we also found that CR10iNG was quite capable of blocking harmful websites like porn sites. But no matter how good an enterprise-class UTM is, it should provide elaborate reports on harmful activities. To check such activities, click on 'LOGS & REPORTS> View Reports.' This would redirect you to 'Cyberoam iVIEW.' Here log in and you can find all the necessary reports in a graphical manner for future analysis and immediate action.

The web UI provides detailed logs of all activity. It's light footprint had no adverse effects on our host machine and performed well in all our security tests. Its iView console provides get the detailed graphs on web filtering, antivirus, anti-spam and more. A useful feature is the ability to view specific user activity, so you can see all web categories, domains, and sites an individual has attempted to access.

Bottomline: Cyberoam CR10iNG UTM is a viable appliance that can protect networks against malware. The compact device can be setup easily and its web console lets you configure policies easily as well as provides you with detailed reports. The appliance is capable of protecting the network against various threats as well as attacks such as DoS.



HP Pavilion AB035AX

Price: ₹31,500

KEY SPECS

- 2.2 GHz AMD Accelerated A8-7410 Processor
- Windows 8.1 OS, 4 GB RAM
- 1 TB HDD, 2 GB AMD Radeon R7 M360 GPU
- 15.6-inch LED-backlit 1920 X1080 FHD display

- ✔ Build quality, performance, equipped with all ports and SuperMulti DVD writer
- ✘ A bit bulky, poor battery backup

HP Pavilion AB035AX is a budget laptop with a classic design, 15.6-inch LED Backlit 1080p FHD display and bouquet of features. This laptop is packed with 2.2 GHz AMD Accelerated processor A8-7410, 4 GB DDR3 RAM, 2 GB AMD Radeon R7 Series M360 GPU, 1 TB of hard drive and runs on Windows 8.1 OS. This combination of AMD processor and GPU makes this laptop capable enough to handle various productivity tasks as well as graphic intensive games. This is a decent option available at affordable price point, but disappoints with poor battery performance.



SCORE

PRICE: **9/10**
PERFORMANCE: **8/10**
FEATURES: **9/10**

Overall: 9/10



CATZ 13000 mAh Power Bank

Price: ₹2,999

KEY SPECS

- 13000 mAh battery
- LED flash light, two USB ports, one micro USB port
- 4 LED indicators, function buttons

- ✔ Solid build quality, powerful flash light, 1A and 2A USB ports for charging
- ✘ A bit bulky, expensive

CATZ PBCZ4 power bank comes with 13000mAh battery capacity and has a soft matte finish. This has the power to charge 4 devices in one full charge and it comes with a bright LED flashlight with different brightness levels. It commands a higher price in the 13000 to 15000 mAh category but its durable body and huge capacity makes it the right travel partner.

SCORE

PRICE: **7/10**
PERFORMANCE: **9/10**
FEATURES: **9/10**

Overall: 9/10

Digisol DG-WM2003SI

Price: ₹5,700

KEY SPECS

- 300 Mbps Wireless Speed, 8 Dbi
- 4 different Wi-Fi modes, security features (WEP, WPA, WPA-PSK, etc.)
- Advance features (Firewall and UPnP, SNMP management)

- ✔ Decent download speed, simple UI
- ✘ Average file transfer speed

Digisol DG-WM2003SI ceiling mount wireless access point is designed for small business users, but consumers with large homes can also get benefits out of it. This wireless access point is available at a competitive price point and delivers decent wireless speed. The ceiling mount AP comes with security features to protect your network and has the capability to cover a large room.



SCORE

PRICE: **8/10**
PERFORMANCE: **7/10**
FEATURES: **8/10**

Overall: 8/10

For detailed reviews, visit www.pcquest.com



SMARTPHONE

LG G4

- Anuj Sharma

With a pair of great cameras, a newer version of LG UI 4.0 and a refreshing leather back panel, the LG G4 is a great phone to flaunt

Price: ₹46,500

With a **slight curve in its screen and leather back** panel the LG G4 is a refreshing change from the **traditional flat and metallic phones**. It is also the first smartphone to use a new 5.5-inch IPS Quantum Display, which offers 20 per cent greater color reproduction, 25 per cent improvement in brightness and 50 per cent greater contrast. The 2,560x1,440-pixel resolution and 534 pixels per inch (ppi), puts it above the Apple iPhone 6, Galaxy S6 and HTC One M9. The device offers 2GB of onboard storage and a microSD card slot that can hold up to 2TB.

The LG G4 runs on **Android 5.1 Lollipop** and on top is LG's latest UI, UX 4.0 which is intuitive and easy to navigate. LG has attempted to create a Google Now-like interface with Smart Bulletin which is similar to the G3.

KEY SPECS

- IPS Quantum Display Capacitive
- QHD Resolution, Gorilla Glass 3
- Android 5.1 Lollipop
- LG 4.0 UI
- Qualcomm Snapdragon 808 processor with 1.8 GHz 64-bit Hexa-Core CPU
- Adreno 418 GPU, 3GB
- 16MP Rear Camera with Laser Auto Focus
- 8 MP Front Camera.



Powerful bright display, camera, snappy performance, raw image shooting, expandable storage



Gets heated while charging



With a **16 MP camera**, the LG G4 can shoot in raw and jpeg file formats quite effectively. The shots have rich colors, fine details and the images are just brilliant. The 8MP front shooter utilizes LG's fun and convenient Gesture Shot and Gesture View features. The camera integrates OIS 2.0 (Optical Image Stabilization) to capture stable shots if you are in motion.

As with traditional smart phones that have power and volume buttons either at side or at top, the LG G4 houses **power button and volume controls at the back leather panel**. The volume controls can also be used to scroll the web pages up and down while browsing.

The IPS Quantum Display produced vibrant images with high contrast. The In-cell Touch Display technology provides a **smooth and super-responsive feel** and comes to life with slightest touch. The 1.8GHz processor with 3GB RAM is capable of playing high end games with ZERO lag and there is nothing that can't be run on the smartphone.

Using **Dual Window**, the **5.5 inch display** gets splits into two screens so you can use two apps simultaneously. With GlanceView, you can also check the time, date and any missed notifications on the sleeping screen by swiping your finger downward from the top edge.

BOTTOM LINE

The LG G4 is an interesting smartphone with a unique design, an excellent display, and a camera that's always ready to capture your precious moments with great image quality. Added features like LG UX 4.0 UI, raw image shooting capability and expandable 2TB storage make it a unique flagship smartphone.

SCORE

Price: **8/10**

Performance: **9/10**

Features: **9/10**

Overall: 9/10

For detailed reviews, visit www.pcquest.com

Apple Car Play

- Anuj Sharma

It integrates with a vehicle's infotainment system, providing quick access to navigation, music, messaging, phone calls, and more, without requiring you to ever look at your iPhone. We got a chance to review Apple Car Play in a 2015 Maruti Suzuki Baleno.

Price: Comes Integrated with Maruti Suzuki's latest Baleno cars (In Petrol/Diesel Alpha Models)

CarPlay behaves like an **app on top of a car's native infotainment system**. It's a system that integrates your iPhone apps with your car's infotainment systems, allowing you to control them and your device, more easily. Just plug in your iPhone into your car via USB and tap the CarPlay icon that appears on the screen in your dashboard and use the functionality of your iPhone in a familiar grid of iOS-style app icons without having to fumble around with it and take your eyes off the road. It's safer, easier and more convenient.

The app icons work exactly like you'd expect: tap the one you want to open. The lower left corner of the screen housed a home key that will take you back to the grid layout of apps or wake up Siri with a long-press. The iPhone will charge if it's plugged in plus it is fully functional even when CarPlay is running, so you can still use it instead of relying on the car's digital dashboard.



It will also answer most standard queries, such as **"what's the weather"** or **"what's on my calendar today"**.

Siri's dictation is accurate and helps you send messages in one go. You will not be able to see your messages in display nor does it provide any other notifications.

There are three ways to control # your car play **without physically touching** your iPhone.

Controlling Using Siri-You'll be able to talk to your vehicle via Siri. It includes playing music from your phone or from your favorite band. It can also be made to read out any new messages plus you can dictate your reply. Using a touchscreen display and lastly Using your car's physical buttons via volume controls, track skip and the like are all integrated and will work as expected in CarPlay.

Apple Maps app is the only navigation option supported. Although Apple Maps has come a long way since its debut, it's still not as successful and good as Google Maps, and it's really the one thing I wish I could change with CarPlay. Traffic information doesn't seem to be as realistic as Google's.

KEY SPECS

- Compatible with iPhone 5 or higher
- Hands-free ability to make and take calls using voice controls.
- Siri Integration to send, read and reply to text messages



Easy to use and access for what you need, Siri integration cuts down on distraction while driving



Google Maps not supported

BOTTOM LINE

iOS addicts and fans of straightforward tech will find plenty of reasons to move to Apple CarPlay and never look back. It provides a simpler and safer way to access the services you want from your phone while driving, and you don't have to learn a completely new interface just to do that.

SCORE

Price: **NA/10**

Performance: **9/10**

Features: **9/10**

Overall: 9/10

For detailed reviews, visit www.pcquest.com



Nvidia GeForce GTX 960

Price: ₹36,900

KEY SPECS

- 1024 CUDA Cores
- 1190 MHz Base Clock
- 1753MHz Memory Clock
- 2 GB GDDR5 Video RAM
- 4096x2160p max resolution

- 👍 Looks cool, silent, solid 1080p performance, low power consumption
- 👎 A little lag in the performance while playing high graphic intensive games

The GTX 960 is designed for 1080p gaming and delivers better performance with its revised Maxwell hardware. With lower power consumption and zero noise, it is so far the viable choice to enjoy all the latest games on this Full HD to WHQD card with a robust performance, however playing high graphic intensive games like Shadow of Mordor may lead to a little lag in the performance.



SCORE

PRICE: **7/10**
PERFORMANCE: **9/10**
FEATURES: **8/10**

Overall: 8/10



Nvidia GeForce GTX TITAN X

Price: ₹85,099

KEY SPECS

- 3072 CUDA cores, 1000 MHz base clock
- 3505 MHz memory clock
- 12 GB GDDR5 video RAM
- 5120x3200p max resolution

- 👍 Good gaming performance, efficient single GPU, silent, overclocking, supports up to 5k resolution
- 👎 Expensive, heating

The flagship Nvidia GTX Titan X video card comes with new features and sizable performance. It is an efficient graphics card with single GPU that can handle up to 5k resolution and four monitors at a time. This card is offering rich gaming performance which was previously available only with power-hungry dual-GPU cards. The gaming beast delivers good performance, yet it is available at a little higher price point.

SCORE

PRICE: **7/10**
PERFORMANCE: **9/10**
FEATURES: **9/10**

Overall: 8/10

Nvidia GALAX GeForce GTX 980 Ti HoF

Price: ₹68,000

KEY SPECS

- 2816 CUDA cores, 1025 MHz base clock
- 3505 MHz memory clock
- 5120x3200 max resolutions
- 6 GB GDDR5 video RAM

- 👍 Supports up to 5k resolution, silent, cool, efficient GPU
- 👎 None

Nvidia GALAX GeForce GTX 980 Ti HoF is a real gaming beast. This can handle all the modern age games as it supports up to 5k resolution. The graphics card runs smoothly and there is no noise during the operation and no heating issue. Available at the mid-range price point, this is the right gaming companion for all the gamers.



SCORE

PRICE: **8/10**
PERFORMANCE: **9/10**
FEATURES: **9/10**

Overall: 9/10

For detailed reviews, visit www.pcquest.com

Bang & Olufsen Beolit 15 Bluetooth Speaker

- Anuj Sharma

The Bang & Olufsen Beolit 15 has an elegant and innovative design that resembles a picnic basket

Price: ₹34,990

The top panel of the speaker features a rubberized tray and also **houses tactile controls for Volume, Power, and Bluetooth pairing**. The front and sides are covered in metallic grille delivering 240 watts of power. It weighs 2.7kg so you can carry it around but can't just slide it into your backpack. Under the hood it houses three 1.5-inch mid-tweeters, one 5.5-inch full-range driver, and two 4-inch passive bass radiators. You will also find a compartment on the **back panel wherein you can store your charging cable**. There's a USB connection for charging mobile devices, a 3.5 mm aux input, and a battery status indicator next to compartment. There is no speakerphone functionality, which comes as a surprise as it is a common standard feature on portable Bluetooth speakers these days.



The speaker comes with a **premium leather handle** to avoid the speaker from "wobbling" when carried around. We also put our smart phone at the anti-dust treated rubber tray on top of Beolit 15 and the smart phone does not wobble even when the bass is pumping and stays put.

The speaker has a well-balanced sound profile and sounds really good even at higher volumes. Most of the speakers perform well at lower and mid level volumes, but when you crank things up, the speaker distorts at certain frequencies and the bass tends to get destroyed. However, the Beolit 15 doesn't sound like it's restraining itself the louder you play it. On tracks with intense sub-bass content, like DJ Magic Mike's **"Feel The Bass,"** the speaker pumped out flawless bass with a lot of oomph and detail. The mid and treble ranges are well-defined, and surprisingly, the vocals sound crisp and clear, even at low volume levels. The combination of drivers and sub-woofer don't even miss a single beat. Even when you are listening to orchestral tracks it sounds clear, with **higher register strings, bass, and vocals** maintaining their presence in the spotlight.

KEY SPECS

- 2 x 35 watts Bass Power
- 1 x 5.5" long-stroke Full- Range Driver
- 2 x 4" Passive Bass Radiators
- 3 x 1.5" Mid-Tweeters
- 18WH Capacity, built-in
- Rechargeable Li-ion battery
- Dimension: 9.05 x 7.4 x 5.3 in
- Weight: 2.7 Kg



Stylish design, Excellent audio performance with rich bass and clear highs, gets very loud, 24 hours of music playback



Expensive, no speaker phone capability

BOTTOM LINE

Bang and Olufsen Beolit 15 is one of the few standout products in the wireless speaker category, featuring an elegant design and excellent sound signature. It will appeal to true audiophiles and to most listeners. If price is peanuts for you, then B&O Beolit 15 will not disappoint you.

SCORE

Price: **8/10**

Performance: **9/10**

Features: **9/10**

Overall: 9/10

For detailed reviews, visit www.pcquest.com

PhotoFast MemoriesCable 32 GB

Price: ₹11,600

KEY SPECS

- Lightning and USB 3.0 ports
- Compatible with iOS 7.x/8.x - Mac OS X - Windows 7/8/XP

👍 Dual operational cable, charging cord plus storage drive, useful app with loads of functionality

👎 A little expensive, cord length is short

iPhone and iPad users usually face a problem – low storage space and low battery. PhotoFast MemoriesCable is designed to cater to both. It comes with 32 GB of storage space and doubles up as a smartphone charger. PhotoFast MemoriesCable's bundled app comes with loads of features which enable you to easily backup the device as well as share contents over social media networks. Though the drive offers good transfer rates and the security features are also pretty good, it's very expensive.



SCORE

PRICE: **7/10**

PERFORMANCE: **9/10**

FEATURES: **10/10**

Overall: 9/10



Zagg Pocket Bluetooth Keyboard

Price: ₹5,399

KEY SPECS

- Folded dimensions: 14.5X54.5X223.5mm
- Unfolded dimensions: 45X178X223.5mm
- Spacious and standard keyboard layout

👍 Compact design, lightweight, spacious keys, familiar keyboard layout, battery life

👎 Average build quality, no dedicated keys for mobile devices, no backlight

Zagg Pocket Keyboard is available at decent price as compared to other options which offer better flexibility. There are no shortcut keys designed for mobile devices yet it is quite compact, offers decent typing experience, has good battery life, and comes with a mobile device support stand, which makes it the right companion for users to boost their smartphone productivity.

SCORE

PRICE: **8/10**

PERFORMANCE: **9/10**

FEATURES: **8/10**

Overall: 8/10

Vivo Y27L (3-in-1)

Price: ₹12,990

KEY SPECS

- 64-bit snapdragon 1.2 GHz Quad core processor
- Adreno 306, Android 4.4.4 based
- 4.1 inch HD IPS, 1GB RAM
- 8 MP rear and 5MP front camera, 2260 mAh battery

👍 Good camera, attractive UI, lightweight and sleek

👎 Some lag can be experienced while multitasking

Vivo Y27L is a light and sleek smartphone that measures only 6.99mm thick, with solid chassis and cool design. Having the 4.7 inch HD display with HD resolution (1280 x 720p), it comes with a good camera and bright display though there is no issue while using the device, yet performance lag can be seen easily while switching between apps or games. The mid-range smartphone could be a good bet if you are looking for a device sleek and compact device, else spend a little more and buy other available options such as Asus Selfie for the better camera and overall performance.



SCORE

PRICE: **7/10**

PERFORMANCE: **7/10**

FEATURES: **7/10**

Overall: 7/10

For detailed reviews, visit www.pcquest.com

Government 3.0

Airtel business recently organized a forum in Bangalore, along with CIOL for govt. policy makers and decision makers of Indian Public Sector companies on how to transform to the next phase of governance.

– Anil Chopra



Debopam Raha, Technical Director, Infrastructure & Govt. Services (IGS), KPMG India delivers a session on "Insights on e-Govt Best Practices".



Harjinder Kohli (Bobby), VP & Head-Govt. Vertical, Bharti Airtel Ltd, talks about how the Govt. can transform to the next phase of governance, along with some key solutions from airtel.



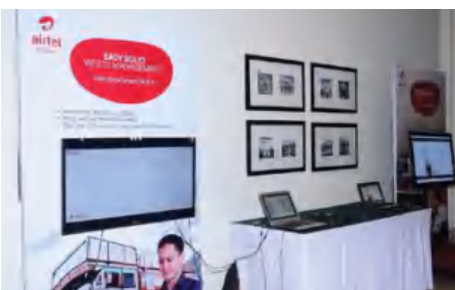
Panel Discussion on Realizing the next level of governance with technology. The panelists (From L to R): Harjinder Kohli, airtel; Debopam Raha, KPMG, and Anil Chopra, PCQuest. The panel discussion was moderated by Sujay Nair (photo on the right), a seasoned technology consultant.



Airtel showcased its Traffic Challan Management System at the forum, which has been used by the Delhi Traffic Police successfully for the past 10 years.



Airtel has many other solutions for the govt., which were also showcased.



In a country like India, where 70 percent of the population lives in villages, providing conventional services is a challenging task. Technology can help alleviate these challenges, and several of them are available.

Bharti airtel, along with CIOL, recently organized a forum for govt. policy makers and decision makers of Indian public sector companies to discuss some of these challenges and to highlight the ICT needs of Government and their alignment with the goals of good governance.

The forum had insightful presentations by senior leaders from KPMG and airtel, followed by a panel discussion to dwell on the emergence of widespread adoption of emerging technologies and mobility solutions as game changing ICTs.

The discussions were very interactive with several key points raised by both the panelists and the audience on how to drive increased efficiency in operations and expansion of addressable markets of public sector units, and how to have a positive impact on delivery of G2C, G2B, and G2G services.

The forum went off very well with over 40 key govt. officials attending, and participating in the discussions. □

Digital Leaders' Forum 2015

PCQuest and CIOIL, along with Kodak Alaris and Centillion organised this forum on 20th Nov, 2015 in New Delhi to understand the challenges faced by organisations in digitising information, key strategies that could help alleviate them, and the road ahead

– Adeesh Sharma



Unveiling Kodak i4000 Series Scanner: (L to R) Dinesh Poduval, president, Centillion Solutions & Services; Vivek Naidu, VP-Info Mgmt, Kodak Alaris India; Cassio Vaquero, Regional Director - Info Mgmt, Kodak Alaris APAC; Michael Andrade, EVP-Business Head Agriculture, HDFC Bank; Anuj Khurana, president, CBSL and Shamim Akhtar, DANICS (IAS Allied) officer, Govt. of Delhi.

Digitising information coming from different sources—land records, bank accounts, insurance data, government registers, etc—forms an integral part of the Digital India movement. Unless the key stakeholders set their processes straight and take the right approach to digitising information, the dream of a completely Digital India cannot be achieved anytime soon. During the course of the forum, all the speakers and panellists repeatedly emphasised this fact and also shared their experiences on how the challenges can be neutralised over the course of time.

Vivek Naidu, VP-Information Management, Kodak Alaris India set the tone for the evening by highlighting how information security, availability of the right technologies and the access to right information is critical for business growth.

The chief guest, Dr. Dinesh Tyagi, IAS, CEO, CSC eGov Services India, in his address shared his experiences on building CSCs (Common Services Centers) in rural India and how local population was roped in to manage those. 'Connectivity and power are key issues faced in rural areas

but grassroots innovators have worked out solutions,' he pointed out. Now numbering 1,50,000, these branches help people with mundane tasks such as utility bill collections, banking transactions, etc. 'Digitisation is a key process to deliver G2C processes, and they still suffer from archaic policies such as unnecessary attestation, too much data being asked for while taking loans, etc, he further added. He also stressed on the need to build a digitisation forum to educate the government departments and masses on the benefits of using digital technologies and how mundane G2C processes could be made more efficient and user-friendly through it.

Digitisation opportunities on the rise

Cassio Vaquero, Regional Director-Information Management, Kodak Alaris APAC dwelled on the opportunities ahead for the digitisation industry by stating that even developed countries such as the US still conduct more than 50% of their transactions through paper. He also talked about the new challenges faced by organisations in managing information coming in from digital channels. Banks,



The panelists: (L to R) Shamim Akhtar, DANICS (IAS Allied) officer, Govt. of Delhi; J M Baisakh, Director-IT, Information Cell, Parliament Committee; Anuj Khurana, president, CBSL; Vivek Naidu, VP-Info Mgmt, Kodak Alaris India; Michael Andrade, EVP-Business Head Agriculture, HDFC Bank; and Dinesh Poduval, president, Centillion Solutions & Services. The panel discussion was moderated by Anil Chopra, Editor-PCQuest and CIOL.

healthcare, government, logistics and education are some of the organisations and industrial segments that face a 'document deluge.'

Michael Andrade, EVP-Business Head Agriculture, HDFC Bank shared his experiences in dealing with farmers across rural India. He stated, 'There are 130 million tech-savvy farmers across India who regularly use a smartphone. It is very important to keep their next generation engaged in farming by offering them better services through new, innovative products that are based on digital technologies'. The challenge for banks is to service 80% of the farmers whose land holdings are less than one hectare in size and they also have limited access to financial markets. He emphasised the need to augment the rural payments model by establishing good collection points and reaching out to the farm extension workers. He gave interesting examples about the use of digital technologies by companies engaged with the farming community. For instance, a dairy company regularly monitors farmers by feeding in information about the cattle into their information systems on a daily basis. Over the next five years, we could use remote sensing data through satellites, drones, etc to monitor the remotest of rural areas.

How Indian organisations can speed up digital transformation

The panel discussion focused on how Indian organisations should work their way towards digital transformation. During the course of the discussion, the panelists discussed numerous examples of how digitisation of records has helped them weed out fraudulent beneficiaries of government schemes.

Shamim Akhtar from the Delhi government discussed details about the old-age pension scheme of the Delhi government, where, from the 4.5 Lakh pensions disbursed, they were able to weed out 75,000 pensioners who were

since dead, all because of digitisation of records.

J M Baisakh, Director-IT, Information Cell, Parliament Committee, discussed why because of the complexity of procedures involved and security concerns, the digitisation process is moving slowly within the Parliament.

Anuj Khurana, president, CBSL, informed the audience that Census 2011 would not have been possible without digitisation. He gave examples of industries where digitisation has made a huge impact. For instance in the insurance industry, managing of records and claims has become easier with the availability of relevant information online. Also, in a state like Bihar, they could get land registry done in three hours with land ownership information easily accessible online. The telcos are able to digitise records of their customers in a few hours after collection of forms.

Dinesh Poduval, president, Centillion Solutions and Services stressed on the need for organisations to perfect their processes first before they go for digitisation. 'Digitisation is an enabler and once your processes have been perfected, there's no dearth of options as to what digitisation could do for you,' he added.

The audience expressed apprehensions about the sanctity of the Aadhar process and asked how it could be considered a reliable source of identity in the event of so many cases of identity duplication being reported. The panelists assuaged these concerns by telling how the Aadhar process has been augmented in the recent past, so it takes 2-3 months now to issue a new Aadhar card instead of 15 days previously. Also, Aadhar data can be verified online in less than 1 ms.

Another key concern raised was the rising instances of thefts of digital assets such as ATM machines. It was agreed that increased security around these assets is fundamental to their widespread use and one way of achieving this is to make digital transactions more secure and trustworthy so that the dependence on cash is reduced. □

ENTERPRISE IT

Windows 10 poised to transform Enterprise IT

As part of Windows as a service, the November update delivers significant updates for business customers, including Windows Update for Business, Windows Store for Business, Mobile Device Management, Azure Active Directory and new security features. Mobile Device Management empowers IT to use the full power of Enterprise Mobility Management to manage the entire family of Windows devices, including PCs, tablets, phones, and IoT. Azure Active Directory Join, empowers IT to maintain one directory, enabling people to have one login and securely roam their Windows settings and data across all of their Windows 10 devices. Microsoft has also packed security features like Credential Guard that safeguards credentials inside a hardware-based virtualized environment and breaks the popular “pass the hash” used in many major breaches, Device Guard uses Trusted Boot to prevent intruders from installing malware, helping to keep company devices secure.



SUSE Enterprise Storage 2 Brings Ceph-Based Storage to Any OS

SUSE Enterprise Storage 2 is the first and only Ceph-based solution with heterogeneous operating system support, giving customers the ability to deploy software-defined storage with less cost. SUSE is also collaborating with partners to bring SUSE Enterprise Storage to devices powered by 64-bit ARM technology. Powered by Ceph, SUSE Enterprise Storage 2 is a highly scalable and resilient software-based storage solution that enables organizations to build cost-efficient storage using commodity off-the-shelf servers and disk drives. SUSE Enterprise Storage 2 supports iSCSI in multipath configurations, enabling block storage across operating systems and environments including Linux, UNIX and Windows. Version 2 also adds at-rest data encryption to increase security for physical assets.

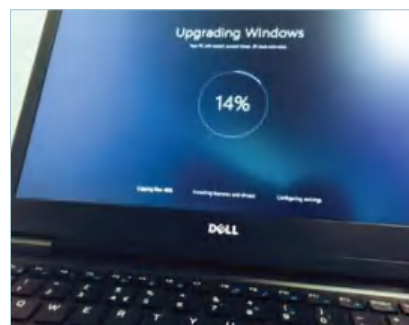
TI introduces lowest latency, highest ESD industrial Gigabit Ethernet PHYs, enabling real-time Industry 4.0 applications

The new family of six devices enables engineers to bring real-time Industrial Internet of Things (IIoT) capabilities to rugged factory automation systems, motor drives, and test and measurement equipment. The new DP83867 family meets stringent electromagnetic interference (EMI) and electromagnetic compatibility (EMC) standards, reduces power consumption, and offers designers flexibility with multiple temperature, media access control (MAC) interface and packaging options. The DP83867 industrial Gigabit Ethernet PHY family is available with prices starting at US\$4.40 in 1,000-unit quantities. Designers can select from two package options: a 48-pin quad-flat no-lead (QFN) package for space-constrained applications, and a 64-pin quad flat package (QFP) optimized for ease of use.

MOBILITY

The Windows 10 November Update: What's coming on your PC?

Threshold 2 is now publicly available for everyone to download, as Microsoft released it a few hours back as the Windows 10 November Update, confirming on Twitter that it will be a staggered release. The most visible change is the ability to add a fourth column of tiles, which now allows you to fit up to four medium or two large Live Tiles per group. Starting with Cortana, the personal assistant now recognizes details like phone numbers, email addresses as well as physical addresses that you write in the notebook with a stylus. It also gets the ability to track events and movie bookings and can now set reminders and more. Another important change is the ability to alert you about missed calls from your Windows phone. November Update also brings along an updated Memory Manager that offers a new feature called compression store. When more memory is needed, this technology basically compresses unused pages in RAM instead of writing them to disk. This concept will make computers run a bit faster, particularly those with low end hardware.



Google Maps offline now available in India

It's not uncommon to have a spotty internet connection in India and this can be really frustrating when you're trying to find your way to a new place or looking for your next turn while driving. Google hopes to make getting around in India a little easier, with the launch of new offline functions in Google Maps. You can now download an area of the world to your phone, and the next time you find there's no connectivity — whether you're going on a road trip to Goa, or looking up directions to your next destination from an underground parking — Google Maps will continue to work. Whereas before you could view an area of the map offline, now you can get turn-by-turn driving directions, search for specific destinations, and find useful information about places — like hours of operation, contact information and ratings — all without an internet connection.



Practo – Uber join hands to bring healthcare services to customers

Practo users across India, Indonesia, Philippines and Singapore who book an appointment on Practo's app will be able to see the closest Uber available when they get a reminder alert for their appointments. In addition to viewing the estimated fare and how long it will take for the Uber to arrive, the driver's app will be pre-filled with the final destination's address at the very beginning of the trip. On requesting an Uber, the user's final destination will be auto filled on the driver's app once the trip starts, making the entire experience seamless. The next phase of integration will involve notifying the user to request for an Uber, an hour prior to the appointment.



Yahoo introduced Flickr for iOS 9 with extended 3D touch and spotlight search features

In your Flickr Camera Roll, Yahoo has developed a new 3D Touch gesture to help you find your best shot. Lightly press a photo to see a preview, then move your finger left/right to preview neighboring photos. Once you've found your favorite, press harder to pop full-screen. New in iOS 9, 3D Touch "Quick Actions" let you do the things you do most often, faster and in fewer steps. Lightly press our app icon to upload a photo, skip directly to notifications or the feed or to kick off a search right from your home screen. Using Spotlight search in iOS 9, search for albums, groups or recently-viewed photos without even opening the Flickr app. With universal link support, links you send or receive will now open directly in the Flickr app, instead of as a web page in Safari.



Net Protector

NP AV

Total Security

PC, Laptop
Tablet, Mobile
सुरक्षा



Internationally
Tested & Certified
ISO 9001 : 2008
Certified Company

india
antivirus **com**

9272707050
9822882566
sales@indiaantivirus.com

HOT LAUNCHES



ObiWorldphone SF1 smartphone with 5 inch display, Android Lollipop 5.0.2 launched @ Rs.11, 999

ObiWorldphone SF1 smartphone comes with 4G LTE and supports FDD B3 1800MHz and TDD B40 2300MHz bands. It features a unibody design with metallic accents and floating glass display. The smartphone comes with a 5-inch JDI In-Cell IPS full-HD (1080x1920 pixels) display offering a pixel density of 443ppi. It also comes with Corning Gorilla Glass 4 for screen protection. It runs Android 5.0.2 Lollipop with the Obi Lifespeed UI, and is powered by a 64-bit octa-core Qualcomm Snapdragon 615 (MSM8939) SoC clocked at 1.5GHz coupled with Adreno 405 GPU. The Obi Worldphone SF1 supports expandable storage via microSD card (up to 64GB). It will be available for consumers from December 7th, exclusively on NDTV Gadgets360. The smartphone will be available in two variants – one with 2GB RAM/16GB storage and another with 3GB RAM/32GB storage with the option of expandable memory in both the variants.

Everything Proof range, the new DNA of Altec Lansing bluetooth speakers

The new range of 12 speakers includes MINI H2O speaker, MINI LIFEJACKET 2 speaker and LIFEJACKET 2 speaker brings a combination of design aesthetics, impeccable sound technology and sturdy hardware. The speakers are compatible with Apple, Android, Blackberry, tablets, laptops and other Bluetooth enabled devices. With up to 10hrs of battery life and weight of 0.9 pounds Mini Lifejacket 2 is waterproof, sandproof, snowproof, dustproof and shockproof. It floats as well. LifeJacket 2 has strong battery back-up up to 16 hours, it has 33 feet of wireless range and includes power bank to remotely charge other devices, speakerphone with caller id, voice confirmation, aux in jack, accepts voice commands, NFC compatible.



Asus Brings Gaming beast 'R510'

The ASUS R510JX is powered by a 4th generation Intel core i7 4720HQ Quad core processor which performs twice as better in a multicore usage scenario. Enhancing the graphics is Nvidia GTX 950M gaming hardware. It is based on Nvidia's latest Maxwell architecture that delivers smooth, responsive performance. The Nvidia GTX 950M's features include Nvidia Battery Boost Technology, Nvidia Optimus Technology, Nvidia GPU Boost 2.0, GeForce Experience and GameStream. ASUS R510JX can handle modern games and high end multimedia content with ease resulting in a rich gaming experience. It also packs Full-HD display and is also endowed with antiglare technology, which is resistant to fingerprints and smudges and is priced at Rs. 69,990.

Capture Beautiful Moments With Portronics Pen Stick

The Pen Stick measures 12.5 cm when folded and is expandable up to 75 cm, making not only easy to carry on the go but extremely adaptable for composing shots. This unique feature allows clicking of pictures much easier and without needing the help of strangers to click your precious moments. The Pen Stick functions without battery system which makes it convenient to work anytime, anywhere. It comes with simple wire connection that plugs into the smartphone's headphone jack to replicate the volume control shutter-release feature on both iOS and Android devices. This Selfie Stick is available at a price of Rs. 599.





ComponentOne Studio



Any Device

Any Platform

Powerful, modular and .NET UI controls



Elegance, Power, and Simplicity



Lightweight
& Customizable



Unified
Code Base

For Complete Studio Experience, Visit
<https://www.componentone.com/>



55 PAISA[#] PER PRINT WITH SAMSUNG LASER PRINTER

**Cost effective**

3000 pages/Toner at ₹1650*

**Reliable Print Quality**

ECO Button gives 20% extra printing

**Efficiency**

Network-enabled. Double-sided printing.

A4 Single Function

SL-M2626/XIP

SL-M2826ND/XIP

A4 Multifunction

SL-M2876ND/XIP

SL-M2876FD/XIP

**GENUINE
SAMSUNG TONER**

The smart range of Samsung Laser Printers ensure smear-free, curl-free, clearer prints. That too at a low price of 55 paisa per print. Go ahead, give your documents the Samsung advantage.

To get the 55 Paisa Advantage, book an appointment with our Expert Team

SMS 'PRN' to 5616160 Email us at sales.enquiry@samsung.com Visit www.samsung.com/in/business/printers/55p

*Toner yield is based on the assumption that print per page is under 5% standard coverage area. *55 paisa print output is valid till the optimum drum life of up to 9000 pages.